

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**

**Order Instituting Rulemaking to Examine the  
Commission's post-2008 Energy Efficiency  
Policies, Programs, Evaluation, Measurement  
and Verification, and Related Issues**

**Rulemaking 09-11-014  
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**2012 ENERGY EFFICIENCY ANNUAL REPORT OF  
PACIFIC GAS AND ELECTRIC COMPANY (U 39 M)**

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## Order Instituting Rulemaking to Examine the Commission's post-2008 Energy Efficiency Policies, Programs, Evaluation, Measurement and Verification, and Related Issues

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# 2012 ENERGY EFFICIENCY PROGRAM PORTFOLIO

## EXECUTIVE SUMMARY

Pacific Gas and Electric Company (PG&E) submits its 2012 Annual Report for Energy Efficiency in accordance with the Annual Reporting Requirements Manual, Version 4 that is Attachment C to the *Administrative Law Judge's Ruling Adopting Annual Reporting Requirements For Energy Efficiency and Addressing Related Reporting Issues* dated August 8, 2007.<sup>1</sup> The report describes the programs that comprise the 2010-2012 Energy Efficiency (EE) portfolio adopted in Decision 09-09-047 (EE Decision) and summarizes PG&E's energy efficiency accomplishments for 2012.

PG&E's 2012 Annual Report describes the strategies and accomplishments for the following statewide and local programs:

### 12 Statewide Programs

- Residential
- Commercial
- Industrial
- Agricultural
- New Construction
- Lighting Market Transformation
- Heating, Ventilation and Air Conditioning (HVAC)
- Codes and Standards
- Emerging Technologies
- Workforce Education and Training
- Statewide Marketing Education and Outreach
- Statewide Demand-Side Management (DSM) Coordination and Integration

### Local Programs

- Zero Net Energy Pilot Program (ZNE)

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<sup>1</sup> In accordance with the *Administrative Law Judge's Ruling Adopting Annual Reporting Requirements For Energy Efficiency and Addressing Related Reporting Issues* dated August 8, 2007, the Annual Reports are generally due on May 1 of each year following the end of a given program year. By letter dated May 2, 2013, Executive Director Paul Clanon granted an extension for PG&E to file its 2012 Annual Report on June 1, 2013. Since June 1 falls on a weekend, the actual due date is June 3.

- On-Bill Financing
- Local DSM Coordination and Integration
- Third Party Programs
- Government Partnerships
  - Innovator Pilots
  - Green Communities

In 2012, PG&E achieved 164% of its energy savings (gross annual kWh) goal, 125% of its demand reduction (gross summer peak kW) goal and 116% of its gas savings (gross annual therms) goal.

Total portfolio energy savings shown in this report include: 1) estimated energy savings from compact florescent lighting (CFLs) rebated from 2006-2011 and installed in 2012 based on CFL bulb counts provided by Energy Division;<sup>2</sup> 2) savings associated with PG&E's deemed savings programs which include Database for Energy Efficient Resources (DEER) and final approved workpaper values from the 2010-2012 customer energy savings projects program cycle; 3) savings associated with custom projects that were installed during the 2010-2012 program cycle; 4) verified savings associated with the Codes and Standards Code influence; 5) savings associated with behavioral programs that occurred during the 2010-2012 program cycle; and 6) \$21M in shareholder earnings for program year 2010 awarded in 2012 pursuant to Decision 12-12-032.<sup>3</sup>

### Regulatory Background

On September 24, 2009, the Commission issued the EE Decision that authorized \$1.3 billion in funding for PG&E's 2010-2012 EE Portfolio and ordered PG&E to file various advice letters (ALs) to modify programs and detail the program budgets in compliance with the EE Decision. The final 2010-2012 energy efficiency program budgets and program implementation plans were approved in AL 3065-G-A&B/3562-E-A&B on October 21, 2010. The EE Decision authorized the EE programs for 2010-2012, as described in the "Program Description and Strategies" section below.

The EE Decision set energy savings goals for 2010-2012, authorized budgets and cost-effectiveness requirements, placed a cap of 10 percent on utility administrative costs, and

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<sup>2</sup> D.10-12-049 at p. 60

<sup>3</sup> Goals and energy savings exclude Energy Savings Assistance Program (ESAP) impacts.

set targets for certain programs. The budget for Evaluation, Measurement and Verification (EM&V) for the 2010-2012 program cycle is 4 percent of the total portfolio. In addition, the EE Decision determined the DEER and non-DEER measure values used in planning the 2010-2012 EE portfolio would be frozen for the purpose of measuring performance against goals. A number of decisions and rulings subsequently were issued during the portfolio cycle clarifying policies and directives from the EE Decision:

- Decision (D.) 10-12-054, *Decision Addressing Petition for Modification of D.09-09-047*, issued December 16, 2010, adopted the following modifications to the energy efficiency portfolio for 2010-2012; froze ex ante values based on 2008 DEER version 2.05; clarified co-branding requirements with the Engage 360 brand; reduced the per home annual energy savings goals for homes treated under the Prescriptive Whole House Retrofit Program; clarified eligibility for performance bonuses paid under the California Advanced Homes Program; and added language to provide a State Action Doctrine defense for utilities engaging in certain joint energy efficiency activities which are consistent with state policy and supervised by the Commission.
- D.11-04-005, the *Second Decision Addressing Petition for Modification of Decision 09-09-047*, was issued on April 14, 2011. This decision adopted a second set of portfolio modifications which allowed benchmarking to be phased in, starting with large facilities first; specified the number of commercial buildings required to be benchmarked; allowed small variations to the 12 adopted statewide programs to fit the needs of different utility service areas; and expanded the definition of allowable administrative costs.
- D.11-07-030, the *Third Decision Addressing Petition for Modification of Decision 09-09-047*, was issued on July 14, 2011. This decision resolved outstanding issues pertaining to the determination of *ex-ante* energy savings values for the 2010-2012 energy efficiency portfolio. The total portfolio energy savings used in this report include these *ex-ante* updates.

PG&E filed two advice letters requesting authority to shift funds between programs during the 2010-2012 EE portfolio cycle. The advice letters are in accordance with the EE Decision and the *Assigned Commissioner's Ruling Clarifying Fund Shifting Rules and Reporting Requirements* (Fund Shifting ACR) issued on December 22, 2011 that clarified fund shifting rules for third party and government partnerships, financing and other local programs.

- PG&E filed AL 3235-G/3901-E Request for Authority to Shift Funds and Make Other Program Modifications Pursuant to D.09-09-047 on September 12, 2011. In response to the Energy Division's request for additional information and responsive to the Fund Shifting ACR, PG&E filed Supplemental AL 3235-G-A/3901-E-A on

January 13, 2012. The supplemental AL was approved effective February 10, 2012.

- PG&E filed AL 3309-G/4068-E requesting authority to shift funds from its Residential program to its New Construction and Agricultural programs. The AL was approved effective July 20, 2012.

In November 2011, Energy Division, in consultation with the Investor Owned Utilities (IOUs),<sup>4</sup> established a new Program Implementation Plan (PIP) Addendum process to document changes made to 2010-2012 EE program implementation plans (PIPs), based on the following triggers:

- a. Changes to eligibility rules
- b. Changes affecting incentive levels
- c. Fund shifts
- d. Portfolio Budget and Other Commission–Directed Changes
- e. Changes to Program Theory/Logic Models
- f. Addition or elimination of programs and/or sub-programs
- g. Changes in program targets
- h. Change in sub-program approach - unless the IOUs submit logic models for the sub-programs with IOUs
- i. Changes in incented measures
- j. Changes in adopted PPMs/MTIs

PIP Addendums are available for viewing on the CPUC's Energy Efficiency Groupware Application (EEGA) site at <http://eega.cpuc.ca.gov/>.

The Commission approved a management fee with a performance bonus as the shareholder incentive mechanism for utility implementation of the 2010-2012 EE portfolios

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<sup>4</sup> PG&E, Southern California Edison Company (SCE), San Diego Gas and Electric Company (SDG&E) and Southern California Gas Company (SCG).

in Decision 12-12-032. This mechanism awards earnings of 5% of annual program expenditures with up to 1% additional incentive levels for activities performed in-line with the Commission's ex ante review processes. This decision approved an award for PG&E's 2010 performance of \$21 million and the mechanism for calculating the award for 2011 and 2012.

## **PROGRAM DESCRIPTIONS AND STRATEGIES – STATEWIDE PROGRAMS**

### ***RESIDENTIAL PROGRAM***

California set an ambitious market goal of reaching all 13 million existing homes with comprehensive energy efficiency improvements by 2020. To achieve significant progress towards this goal, programmatic efforts must be more integrated, coordinated, and scaled significantly over the next seven years. In addition to coordination with the other IOUs, PG&E continues to work closely with publicly owned utilities (POUs), water agencies, and other organizations across the state and Western Region of the United States. In 2012, PG&E offered comprehensive activities to reach California's diverse population, climate zones, and socio-economic markets to tap the economic potential available while advancing the initiatives of the California Long Term Energy Efficiency Strategic Plan (Strategic Plan) adopted in Decision 08-09-040.

#### **Program Strategy**

The 2012 California Statewide Program for Residential Energy Efficiency (SPREE) offered and promoted specific and comprehensive energy solutions within the residential market sector. PG&E's Residential program employed various strategies and tactics to overcome market barriers and deliver programs and services aligned to support the Strategic Plan by encouraging adoption of economically viable energy efficiency technologies, practices, and services. The ultimate focus of PG&E's Residential program was to:

- Facilitate, sustain, and transform the long-term delivery and adoption of energy-efficient products and services for single and multifamily dwellings;
- Cultivate, promote, and sustain lasting energy-efficient behaviors by residential customers through a collaborative statewide education and outreach mechanism; and

- Meet consumers' energy efficiency adoption preferences through a range of energy-efficient products.

PG&E's Residential program included the following subprograms:

- 1. Home Energy Efficiency Survey (HEES) Program:** In accordance with goals of the Strategic Plan, the HEES Program worked towards advancing whole house energy solutions. HEES pursued innovative initiatives to reverse the growth of plug load energy consumption through behavioral solutions and demand side management (DSM) integration opportunities. The HEES program reached out to selected customer groups through multiple targeted Home Energy Report tranches as part of an increasing effort to create positive behavior change in energy consumers. In addition, the Progressive Energy Audit Tool Suite (Residential Universal Audit Tool) was completed in March 2012 to provide a fully integrated, progressive approach to help customers save energy. Finally, PG&E released its Home Money Saver (Online Buyers Guide) in 2012 to help customers shop for and choose the best energy efficient products and encourage enrollment in programs such as Energy Upgrade California. While focusing on these new initiatives, the program also maintained current survey offerings to continue to help participants understand how they use energy and how they can better manage and decrease its use. Additionally, HEES provided information and referrals to other DSM programs (i.e., demand response and distributed generation programs), water conservation efforts, and Energy Savings Assistance (ESA) programs, where applicable.
- 2. Residential Lighting Incentive Program for Basic CFLs:** The Residential Lighting Incentive Program for Basic CFLs provided customers with incentives in the form of instant rebates. PG&E worked with retailers and manufacturers to reduce the cost of energy-efficient lighting products, encourage the introduction and adoption of energy-efficient lighting products into the market, increase the availability of existing products, and influence the purchasing behaviors of customers. More than 800 retailers at over 1,500 store locations participated in PG&E's program; 50 percent of these locations target low-income/hard to reach customers. In 2012, PG&E continued to ramp down support for Basic CFLs.
- 3. Advanced Consumer Lighting:** Like the Residential Lighting Incentive Program described above, the Advanced Consumer Lighting Program provided customers with incentives in the form of instant rebates for advance lighting products. Working with retailers and manufacturers, PG&E was able to significantly reduce the cost of advanced energy-efficient lighting products, introduce energy-efficient lighting products to the market, and influence the purchasing behaviors of customers. A broad array of product types and models were available for this program's incentives. The 2012 program focused on specialty CFLs, defined as a dimmable, covered, and/or greater than 30 watts, and introduced light emitting diode (LED) recessed fixtures and some replacement lamps towards the end of the program year. In addition, the IOUs collaborated on a statewide Lighting Market

Transformation Program strategy that coordinated IOU efforts to further efficient lighting technologies in California.

- 4. Home Energy Efficiency Rebates (HEER):** The statewide HEER Program offered rebates to residential end-use customers to cover some of the incremental costs of purchasing energy-efficient products. Products were rebated through on-line or mail-in application processes, while refrigerators and dishwashers were also rebated through point-of-sale (POS) rebates. Rebates were offered for a specific list of energy-efficient products; this list of rebated measures varies slightly by utility. The measure list included, but was not limited to, items that could be delivered and installed either by the customer or a contractor, such as Energy Star Qualified<sup>®</sup> room air conditioners, water heaters, CEE Tier 3 clothes washers, insulation, whole house fans and variable speed pool pumps. Finally, the statewide HEER program was supported by various initiatives funded by the program including salesperson training and in-field support by the field services team.
- 5. Appliance Recycling Program (ARP):** The Appliance Recycling Program picked up operable but inefficient appliances, primarily refrigerators, from residential dwellings and businesses to prevent their continued operation and to recycle them in an environmentally safe manner. The PG&E One-Touch retail delivery channel was continued through 2012. The number of participating One-Touch retailers was expanded to include all Sears, 10 Lowes, and 3 Western Appliance locations in PG&E's service area.
- 6. Business and Consumer Electronics Program (BCEP):** In 2012, the Business and Consumer Electronics Program (BCEP), provided midstream incentives to retailers to encourage increased stocking, promotion, and sales of the highest-efficiency televisions on the market. Working statewide, including with the Sacramento Municipal Utility District (SMUD), and regionally with partners including the Northwest Energy Efficiency Alliance (NEEA), the program provided incentives to the market actor best positioned to influence purchasing, stocking, and specification decisions. The program provided field training support services to update marketing materials in retail stores and educate the retail sales force on energy efficiency of the qualified products. PG&E used online systems to help educate customers and enable identification of the most energy-efficient and environmentally friendly electronic products available in the market, with a particular focus on the television market.
- 7. Multifamily Energy Efficiency Rebates (MFEER) Program:** The MFEER Program offered prescriptive rebates for energy efficient products to motivate multifamily property owners and managers to install energy efficient products in both common and dwelling areas of multifamily complexes in addition to common areas of mobile home parks and condominiums. An additional objective of the program was to heighten the energy efficiency awareness of property owners/managers and tenants.

In 2012, the IOUs increased visibility by promoting the MFEER Program and other related programs, including the Moderate Income Direct Install (MIDI) and ESA programs, at various apartment industry trade shows. As a result, customer participation increased with the engagement of energy specialists and large property management firms. PG&E continued working towards a more comprehensive set of measures and explored integration opportunities. PG&E promoted energy efficiency and provided equipment rebates to owners and tenants of multifamily properties of two or more dwelling units, including residential apartment buildings, condominium complexes, and mobile home parks. The MFEER Program also continued to increase its focus on non-lighting measures.

8. **Whole House Performance Program:** In 2012, PG&E continued to ramp up its Whole House Performance Program that was launched in 2010 as a comprehensive retrofit program. The performance path requires a performance assessment of the home, generating a customized set of measures with rebates up to \$4,000 for modeled site energy savings of 40% or more. Customer incentives, marketing, contractor field support, and quality assurance processes supported this program. PG&E's program design yields substantial, comprehensive, and long-term home energy savings and eliminates lost opportunities in existing homes to the maximum extent possible.
9. **Prescriptive Whole House Retrofit Program (PWHRP):** The Prescriptive Whole House Retrofit Program requires a basic set of envelope measures be installed in a customer's home for a \$1,000 rebate. This whole house approach was promoted through the statewide PWHRP in close coordination with the IOUs' local Whole House Performance Programs (described above). Collectively, the Whole House Performance Program and the Prescriptive Whole House Retrofit Program are known as Energy Upgrade California.

PG&E marketed both the Whole House Performance Program and PWHRP offerings to customers and industry participants through a variety of methods ranging from homeowner workshops, contractor participation workshops, contractor marketing collateral and sales training, PG&E's website, and other training activities. PG&E leveraged marketing activities implemented by third party programs funded by the American Recovery and Reinvestment Act (ARRA), including the Energy Upgrade California web portal and mass media campaigns.

## **COMMERCIAL PROGRAM**

### **Program Description**

The 2010-2012 Statewide Commercial Energy Efficiency Program offers strategic energy planning support, technical support (such as facility audits, calculation and design

assistance), and financial support through rebates and incentives. This program focuses on promoting energy efficiency for commercial customers. Targeted segments include distribution warehouses, office buildings, hotels, motels, restaurants, schools, universities, colleges, hospitals, high-tech facilities, bio-tech facilities, retail facilities, entertainment centers, and smaller commercial customers that have similar buying characteristics.

The five statewide subprograms described below — Nonresidential Audits, Calculated Incentives, Deemed Incentives, Direct Install, and Continuous Energy Improvement—comprise the core product and service offerings for the Commercial program. Each IOU also offers local program elements such as Third Party and Government Partnership programs that complement and enhance these core offerings in their service areas.

1. **Nonresidential Audits Program:** Provides customers with basic audits, integrated audits, and retro-commissioning audits. These audits provide an inventory of technical project opportunities and financial analysis information.
2. **Calculated Incentives Program:** Offers incentives for customized retrofit and retro-commissioning energy efficiency projects in addition to technical and design assistance.
3. **Deemed Incentives Program:** Offers rebates to customers in an easy-to-use mechanism to offset the cost of energy efficient equipment.
4. **Continuous Energy Improvement (CEI) Program:** Offers a non-resource pilot program which provides a toolkit of planning and other resources, including analysis, benchmarking, goal setting, project implementation support, performance monitoring, and energy management certification.
5. **Direct Install Program:** Provides small business customers with the opportunity to have a third-party contractor retrofit existing systems with energy efficient systems at low or no cost to the customer.

## Program Strategy

Program offerings were packaged with distributed generation and demand response where appropriate and marketed directly to commercial customers by PG&E staff, trade professionals, third parties, and government entities. Audits, incentives, CEI and direct install components were delivered by PG&E staff and contractors. Rebates were delivered through coordination with manufacturers, distributors, retailers, vendors, contractors and direct to consumer marketing.

PG&E and the other IOUs executed a series of strategies to address the needs of commercial customers in 2012. During this period, the economy started a slow recovery, but customers continued to struggle with lower margins and lack of access to capital. These factors impacted the implementation of energy efficiency projects.

In 2012, two key delivery channels within the commercial sector were achieved by vendors and contractors, particularly for delivery of direct install projects. The IOUs coordinated customer information, provided vendor/retailer/contractor support, and encouraged manufacturer/distributor participation.

An integration team met regularly to develop targeted strategies, including vendor education, to ensure integrated delivery of products and services. PG&E offered On-Bill Financing (OBF) to provide capital for calculated incentive projects. A detailed update for the OBF program is provided below under the Local Programs section.

In September 2012, PG&E launched a new progressive, integrated audit tool (PEAT / UAT) for small to medium sized business (SMB) customers to help them understand how they use energy and how actions they take can help them save energy and costs. The tool focuses on a continuous improvement energy plan, which the customer or PG&E representative can add improvement recommendations to. As customers complete actions, they can see the impact of those actions on their overall usage. This helps motivate customers to add new actions to their plan, leading them towards further progressive improvement.

PG&E continued to align its programs to better meet customer needs. The Sales Operations support team provided assistance to account representatives with audits and calculations. In 2012, PG&E's Energy Solutions and Service department conducted close to 20,000 energy assessments for customers as part of an integrated outreach strategy where PG&E educated approximately 100,000 SMB customers about their upcoming transition to Time Varying Pricing. This aggressive outreach strategy informed customers of the tools and resources available to help them succeed on Time-of-Use rates. Time Varying Pricing is part of the statewide energy plan to ensure greater power reliability by encouraging customers to manage their electricity use more efficiently during times of high electric demand.

Efforts were also coordinated with the Third Party Programs and Government Partnerships. The Third Party Programs were designed to meet the unique needs of the diverse customer markets in PG&E's service area. The Government Partnerships program coordinated with cities, counties and other agencies to develop integrated energy management opportunities. Collectively, these programs complemented PG&E's Energy Solutions & Service outreach and have been part of a comprehensive energy services suite available to customers.

The IOUs also continued to share best practices for these programs to deliver integrated energy savings opportunities to customers as efficiently and effectively as possible.

## **INDUSTRIAL PROGRAM**

### **Program Description**

The 2012 Statewide Industrial Energy Efficiency Program partnered with industry stakeholders to promote integrated energy management solutions to industrial end use customers. The program offerings were designed and promoted to not only overcome the traditional market barriers to energy efficiency, but also to advance distributed generation and demand response opportunities. Customers from the industrial sector include: printing plants, plastic injection molding facilities, component fabrication, lumber and paper mills, cement plants and quarries, metals processing, petroleum refineries, chemical industries, assembly plants, and water and wastewater treatment plants.

The four statewide subprograms described below — Industrial Energy Audits, Calculated Incentives, Deemed Incentives, and Continuous Energy Improvement — comprise the core product and service offerings for the industrial market. Each utility also offered local program elements such as Third Party and Local Government Partnership programs that complement and enhance the core offerings in their region.

1. **Nonresidential Audits:** Offers basic audits, integrated audits, and retro-commissioning audits, which provide an inventory of technical project opportunities and financial analysis information.
2. **Calculated Energy Efficiency Incentives Program:** Offers incentives for customized new construction, retrofit and retro-commissioning energy efficiency projects. The program also provides comprehensive technical and design assistance.
3. **Deemed Energy Efficiency Program:** Offers rebates to customers in an easy-to-use mechanism to offset the cost of off-the-shelf energy saving equipment.
4. **Continuous Energy Improvement Program:** Offers a non-resource program which provides a toolkit of planning and other resources, including analysis, benchmarking, goal setting, project implementation support, performance monitoring, and energy management certification.

### **Program Strategy**

PG&E executed a series of strategies to address the needs of its industrial customers in 2012. These strategies included engaging these unique business segments around the right measures for their business through the following methods: direct, one-on-one interaction between account managers and third party representatives; print, regional- and segment-focused integrated workshops; relationships with industry associations and equipment vendors; and attendance and participation in trade shows and seminars. Each

of these interactions afforded the opportunity to present integrated energy solutions to customers and industry-stakeholders.

The Industrial Program coordinated with Third Party Programs and Government Partnerships as well as the other IOUs. IOU program leads for the statewide Industrial Program and Staff met bimonthly to align outreach strategies and offerings across California.

As discussed earlier in the Commercial Program, in September 2012, PG&E launched a new progressive, integrated audit tool (PEAT / UAT) for small to medium sized business (SMB) customers to help them understand how they use energy and how actions they take can help them save energy and costs. The tool focuses on a continuous improvement energy plan, which the customer or PG&E representative can add improvement recommendations to.

## ***AGRICULTURAL PROGRAM***

### **Program Description**

The 2012 Statewide Agricultural Energy Efficiency Program offered strategic energy planning support, technical support, such as facility audits, calculation and design assistance with financial support through rebates and incentives aimed at providing integrated energy management solutions for energy efficiency, demand response, and distributed generation, including renewables. Targeted segments from the agricultural sector may include agricultural growers (crops, fruits, vegetable and nuts), greenhouses, post-harvest processors (ginners, nut hullers and associated refrigerated warehouses), dairies and water and irrigation districts/agencies. Targeted segments from the food processing sector include: fruit and vegetable processors (canners, dryers and freezers), prepared food manufacturers, wineries and other beverage manufacturers.

The Statewide Agricultural Energy Efficiency Program includes five statewide subprograms: Energy Audits, Calculated Incentives, Deemed Incentives, Continuous Energy Improvement, and Pump Efficiency Services.

Each utility also offers local program elements such as Third Party and Local Government Partnership programs that complement and enhance these core offerings in their region.

1. **Nonresidential Audits Program:** Includes basic audits, integrated audits, and retro-commissioning audits, which provide an inventory of technical project opportunities and financial analysis information.

2. **Calculated Energy Efficiency Program:** Offers incentives for customized retrofit and retro-commissioning energy efficiency projects. The program also provides comprehensive technical and design assistance.
3. **Deemed Energy Efficiency Program:** Offers rebates to customers through an easy-to-use mechanism to offset the cost of off-the-shelf energy saving equipment.
4. **Continuous Energy Improvement (CEI):** Provides a toolkit of planning and other resources, including analysis, benchmarking, goal setting, project implementation support, performance monitoring, and energy management certification.
5. **Pump Efficiency Services:** Helps customers make informed decisions about improving inefficient pumping systems.

### Program Strategy

PG&E executed a series of strategies to address the needs of its agricultural and food processing customers in 2012. These strategies included engaging these highly unique business segments around the right measures for their business through the following methods: direct, one-on-one customer interaction by account managers and third party representatives; relationships with industry associations and equipment vendors; participation at trade shows and educational seminars targeting key customers and industry stakeholders. Each of these interactions afforded PG&E with the valuable opportunity to present integrated energy solutions to customers.

The Agricultural Program coordinated with Third Party Programs and Government Partnerships as well as the other IOUs. IOU program leads for the statewide Agricultural Program and Staff met bimonthly to align outreach strategies and offerings across California.

Integrated program offerings included energy efficiency, demand response, and distributed generation marketed directly to agricultural and food processing customers through PG&E's sales and program representatives. Audits, incentives, CEI and pump efficiency components were delivered through a combination of PG&E staff and contractors. Rebates were delivered through coordination with manufacturers, distributors and retailers. Energy solutions that the agricultural and food processing customers found to be specifically applicable to their operations included pump upgrades, variable speed drives, refrigeration, boiler, steam, insulation, lighting controls, and irrigation measures.

In September 2012, PG&E launched a new progressive, integrated audit tool (PEAT / UAT) for small to medium sized business (SMB) customers to help them understand how they use energy and how actions they take can help them save energy and costs. The tool focuses on a continuous improvement energy plan, which the customer or PG&E representative can add improvement recommendations to.

In 2012, PG&E also initiated several projects focused on the agricultural sector through the Emerging Technologies Program. These projects – which are evaluating expanded irrigation system audit procedures, low flow irrigation equipment and system design strategies, and other new technologies – will inform new PG&E programs that can achieve water savings along with energy savings. These efforts are a key component of PG&E's broader program to target the water/energy nexus.

## ***NEW CONSTRUCTION PROGRAM***

PG&E's 2012 New Construction Programs promoted energy efficiency and use of energy-efficient measures by builders and focused on the maximization of energy efficiency as an energy resource as well as supporting the transformation of the new construction market. The New Construction Programs were buoyed in 2012 by the recovery in commercial and residential construction markets. These economic tailwinds, combined with continued improvements to program design and delivery, contributed to strong program growth and a robust pipeline of project commitments heading into the 2013-2014 program cycle.

The New Construction Program includes three statewide subprograms:

### **1. Savings By Design (SBD)**

SBD is an energy efficiency program developed for the nonresidential new construction industry. Since 1999, SBD has provided statewide consistency, program stability, and savings to California's IOU customers. SBD seeks to protect and preserve natural resources by advancing the design and construction of sustainable communities and promoting green building practices. The program is designed to overcome customer and market barriers to designing and building high performance facilities.

Program strategies included:

- Continuing to offer an incentive of \$100/kW for peak reduction.
- Adding incentive kickers for green building certification, end-use monitoring, and commissioning.
- Adding a \$5,000 stipend for design teams to hold workshops to encourage deeper energy reductions.
- Redesigning program icon; in process on website redesign.
- Making ongoing Improvements to the Energy Design Resources website, including publication of monthly newsletters.

- Planning for Integrated Demand Side Management (IDSM) implementation (combining demand response and energy efficiency in New Construction).

## 2. **California Advanced Homes Program (CAHP)**

CAHP is part of the statewide Residential New Construction program offering. CAHP encourages single and multifamily builders of all production volumes to construct homes that exceed California's Title 24 energy efficiency standards by a minimum of 15 percent. Through this program, projects are approached identically except where explicitly noted. For instance, PG&E's multifamily new construction program, California Multifamily New Home Program (CMFNH), is a Third Party Program implemented by TRC Solutions (formerly the Heschong Mahone Group, Inc). As such, CMFNH offers different incentives and program strategies.

Strategies implemented in 2012 included:

- A scaled incentive structure that rewards higher incentives for incrementally higher levels of efficiency.
- Incentive kickers for green building certification, Energy Star® certification, smaller house sizes, and peak kW reduction from photovoltaic generation.
- Adding a \$1,000/home New Solar Homes Partnership Tier 2 incentive.
- Capturing and paying on savings from final house orientation.
- Including peak reduction as part of the base incentive payment calculation.

## 3. **Energy Star® Manufactured Homes (ESMH) Subprogram**

ESMH is part of the statewide Residential New Construction (RNC) program offering. ESMH addresses new factory-built housing not covered under the state's T-24 energy codes.

Strategies implemented in 2012 included:

- Educating customers, retailers and manufacturers about the benefits of the Energy Star® manufactured home.
- Promoting program participation through focused marketing efforts.

PG&E launched this program in 2010, and, after three years, determined that it could not be operated cost-effectively. This program will not be offered after 2012.

## ***LIGHTING MARKET TRANSFORMATION***

### **Program Description**

The Statewide Lighting Market Transformation (LMT) Program established processes through which the IOUs developed and tested market transformation strategies for emerging lighting technologies (products, systems and design strategies), as well as for technologies already incorporated into their energy-efficiency programs. The LMT addressed lighting opportunities across residential, commercial, and industrial market segments for both replacement and new construction activities. These LMT activities augmented and leveraged the existing IOU programs for evaluating and testing the market transformation needs for short- and long-term activities to reach the zero net energy (ZNE) goals in the Strategic Plan. LMT included market research and coordination activities, as well as an educational component aimed toward improving the information available to consumers, contractors, and other market actors regarding new and existing lighting technologies. The program also formalized a process by which the IOUs can rapidly introduce advanced lighting solutions and emerging technologies to the marketplace, continually improve the IOUs' current lighting programs across all market sectors, and develop innovative new program strategies to continually advance the lighting market.

This program included the following subprograms:

1. **Lighting Technology Advancement:** This subprogram explores processes by which the IOUs can rapidly introduce advanced lighting solutions and emerging lighting technologies to the marketplace. This subprogram contained elements to conceptualize and test initiatives that introduced mid-term improvements to current lighting programs in response to product and market developments across all market sectors
2. **Lighting Education and Information:** This subprogram addresses the pressing need for more accessible information on lighting technologies across all market sectors and among IOU staff and installation contractors. The subprogram helped identify and utilize avenues by which advanced lighting education can be applied to pipelines for large scale customer applications.
3. **Lighting Market Transformation:** This subprogram enables the IOUs to identify gaps in LMT strategies for different technologies and create data-driven solutions. These solutions informed and leveraged energy efficiency program efforts to fill the gaps in market transformation strategies for each lighting technology. The subprogram developed and tested innovative program strategies to advance market transformation and helped enfold proven approaches into resource-based production programs. This third subprogram integrated the findings and networks uncovered by the first two subprograms to implement synergistic activities that drive

the market forward. It collaborated with other lighting programs to plot paths and monitor progress toward achieving ZNE objectives.

### Strategies Implemented in 2012

- Implementation of the LMT Program framework, as revised and formalized in 2011, has continued throughout 2012, highlighted by the activities noted below.
- The Lighting Solutions Workbook was completed in January 2012 and presented to ED staff on Jan. 30, 2012, the West Coast Utility Lighting Team Meeting and EM&V Stakeholder meeting in March, and the ACEEE Summer Study in August. The Lighting Solutions Workbook and its accompanying reports are available for download at <http://www.lightingmarkettransformation.com/>. Throughout the year, the workbook data was used to inform project activities in programs such as Emerging Technologies, Energy Efficiency programs, and Codes and Standards input. For example, the workbook informed the Advanced Lighting Controls Application Certification effort on the energy savings potential and market barriers associated with the controls education and training.
- The Lighting Activity Workbook was completed at the end of 2012 with a total of 394 lighting activities tracked across 17 energy efficiency organizations. Through coordination among the LMT partners involved in the effort, many aspects were added to enhance future collaboration and coordination, including project type, target sector, technology, application, and lead organization. The workbook is intended to work in conjunction with the Lighting Solutions Workbook. A single Lighting Solutions Workbook, by itself, does not show the dynamic nature of market transformation as it provides a snapshot data on potentials and barriers. The Lighting Activity workbook, on the other hand, shows dynamic activities that all have an influence on the lighting market. Having a comprehensive dataset on these more dynamic activities helps reduce duplication of efforts and provides a vehicle for increased collaboration and coordination among LMT partners. The Lighting Activity Workbook and report are available for download at <http://www.lightingmarkettransformation.com/>.
- The Lighting Solutions Pipeline Plans for Residential and Exterior market sectors were completed in 2012. The plans leverage information from the LMT workbooks to characterize the lighting market and relevant trends, describe the market transformation process to push more efficient lighting solutions and reduce support for transformed solutions. The pipeline plans help IOUs meet the lighting needs of customers as well as help meet the IOUs' and California's energy efficiency goals by identifying strategic lighting solutions to push and trim. The Pipeline Plans are available for download at <http://www.lightingmarkettransformation.com/>.
- The LMT Program continues to collaborate with IOU programs such as Emerging Technologies, and Codes and Standards, as well as industry organizations such as the California Lighting Technology Center, Pacific Northwest National Laboratory, lighting designers and manufacturers to increase collaboration and coordination opportunities.

The California Energy Commission (CEC) approved the LED Quality Standard in December 2012. The LMT Program supported the CEC LED Quality Standards implementation by holding weekly coordination meetings with the CEC, Energy Division, and IOU lighting program managers to ensure alignment of implementation strategies going into 2013-2014 implementation.

## ***HEATING, VENTILATION, AND AIR CONDITIONING (HVAC)***

The Statewide Residential and Commercial HVAC Program delivers a comprehensive set of downstream, midstream, and upstream strategies that builds on existing program, education, and marketing efforts and leverages relationships within the HVAC industry to transform the market towards a sustainable, quality driven market. Market transformation, direct energy savings and demand reductions are achieved through these six subprograms that make up a comprehensive program approach:

### **1. Upstream HVAC Equipment Incentive**

The Upstream HVAC Incentive Program offers incentives to distributors who sell qualifying high-efficiency commercial HVAC equipment to increase the stocking and promotion of such equipment.

Strategies implemented in 2012 included the following:

- Continuing to actively promote the program to distributors and manufacturers, both those currently participating and those who have not yet participated much or at all.
- Adding Variable Refrigerant Flow systems to the program.
- Continuing to evaluate other new technologies or other related equipment categories such as water-cooled packaged chillers for introduction into the program.
- Using metrics to benchmark distributor performance relative to their peers.

These strategies resulted in an 84% increase from 2010 to 2012 in high-efficiency HVAC system tonnage installed in PG&E service territory due to this program.

### **2. HVAC Technologies and System Diagnostics Advocacy**

The HVAC Technologies and System Diagnostics Advocacy Program is a coordination and advocacy program that addresses the technical elements critical to increasing the

market introduction of advanced cooling and fault detection and diagnostic technologies.

Strategies implemented in 2012 included the following:

- The Automated Fault Detection and Diagnostics (AFDD) subcommittee of the IOU-supported Western HVAC Performance Alliance finalized the “Onboard and In-Field Fault Detection and Diagnostics—Industry Roadmap.”
- Continued to work with ASHRAE staff and its committees towards the establishment of a national standard for AFDD. ASHRAE has established a standards project committee, SPC 207P, for “Laboratory Method of Test of Fault Detection and Diagnostics Applied to Commercial Air-Cooled Packaged Systems.”
- Collaborated with the other IOUs to complete a series of AFDD projects for residential applications in support of the roadmap, including impacts of common HVAC cooling faults, commercially available AFDD technologies, developing test procedures for evaluating AFDD technologies, understanding HVAC maintenance behavior, and leveraging Home Area Networks. Commercial AFDD testing is ongoing.
- Collaborated with the other IOUs on several activities in support of “Climate Appropriate HVAC technologies” including Western Cooling Challenge, Roof Top Unit Retrofits, and development of laboratory test protocols for evaporative pre-coolers.
- Continuing executive level discussions with several manufacturers to explore partnership opportunities for testing and deploying emerging and/or “climate appropriate” technologies.
- Together with the statewide IOU team, completed Codes & Standards enhancement studies that recommended provisions to CEC for adoption in the Title 24 Energy Efficiency Standards.

### **3. Commercial Quality Installation**

The Commercial Quality Installation Program addresses commercial installation practices to ensure that equipment is installed and commissioned per industry standards.

Strategies implemented in 2012 included the following:

- PG&E continued to work with the Statewide IOU HVAC Team, Energy Division, and industry stakeholders in the Western HVAC Performance Alliance to finalize plans for a re-design of the program that would best drive the desired market transformation called for in the CA EE Strategic Plan.

- In 2012, PG&E designed and launched a Commercial HVAC Quality Installation Contractor Education and Customer Awareness program design, similar to its Residential QI program, described below.
- Additionally, the collaboration with the Air-Conditioning Contractors of America (ACCA) staff mentioned below for Residential QI applies to small Commercial packaged equipment, so the market transformational groundwork has been laid to also ensure that Quality Installation standards can be verified in the field in a sustainable fashion for Commercial HVAC as well.

#### **4. ENERGY STAR Residential Quality Installation Program**

The ENERGY STAR® Residential Quality Installation addresses residential installation practices to ensure that equipment is installed and commissioned per industry standards.

Strategies implemented in 2012 included the following:

- Based on the following program challenges, and with the concurrence of the Statewide IOU HVAC team and Energy Division, re-launched the program in 2012 with a program design that takes a different approach to the Residential HVAC Quality Installation (QI) Subprogram in order to find an approach that can drive the desired market transformation called for in the California EE Strategic Plan.
  - Customers frequently run HVAC equipment to failure and are not aware of HVAC industry standards. It is necessary to first establish a trusted relationship between the contractor and customer in order to engage the customer in a quality installation discussion prior to a run to failure scenario.
  - SCE's QI program experience identified concerns over the sustainability of the program over the long-term based on the high cost of implementing and maintaining the program.
  - PG&E's experience from designing and implementing the companion Residential HVAC Quality Maintenance Subprogram provided insight to the costs and challenges of implementing HVAC industry standards as well as confirmed the need for contractors to build relationships with their customers.
  - ENERGY STAR® Residential QI (ESQI) program analysis performed by PG&E confirmed SCE's experience in that the high cost and minimal market penetration results in a TRC of 0.11 or lower given current cost effectiveness protocols.
- PG&E's program implements a modified approach to the program focused on Residential HVAC Quality Installation Contractor Education and Customer Awareness. PG&E's alternative approach to market transformation is focused on reaching a broad base of HVAC contractors and customers via expanded contractor

education and tool incentives and focused customer awareness. PG&E's approach in 2012 consisted of the following:

- Increasing the number of introductory ACCA QI training sessions for contractors by 50 percent.
- Providing contractor incentives for ACCA QI software and tools ensuring contractors have the necessary toolset to deliver standards-based QI. Driving customer awareness through holistic QI/QM messaging using the QM subprogram as the delivery channel.

In 2012, PG&E worked closely on additional program enhancements and market transformation with ACCA staff, the leading HVAC industry association for contractors. In order to lay the market transformational groundwork the HVAC industry itself to ensure Quality Installation standards can be verified in the field in a sustainable fashion instead of through the older QI program design that continues to pay consultants for verification services, PG&E collaborated with ACCA staff on design details of a new Quality Assured Contractors program for existing homes, called the ACCA Residential Service and Installation (RSI) program launched in February, 2013.

## **5. Residential Quality Maintenance and Commercial Quality Maintenance Development:**

The program addresses residential and commercial maintenance practices to ensure that equipment is serviced per industry standards and that the maintenance effort supports the long-term strategic goal of transforming the trade from commodity-based to quality-based.

Strategies implemented in 2012 included the following:

- Continued to ramp the comprehensive Residential Quality Maintenance Program launched in 2011 that provides incentives for system assessment, system optimization, one-year preventive maintenance agreements based on ACCA/ANSI Standard 4, system air flow improvements, and brushless fan motor installation.
- Continued to ramp the comprehensive Commercial Quality Maintenance Program including incentives based on ANSI/ASHRAE/ACCA Standard 180 that was launched in 2011.
- Continued measure development to the commercial program, including advanced economizer controls.
- Conducted multiple training sessions for both residential and commercial contractors on Advanced Diagnostics and other Quality Maintenance practices

to ensure that participating contractors/technicians have the skills necessary to assess, maintain, and optimize systems per industry standards.

- Supported residential and commercial contractors with marketing materials and outreach efforts to educate customers on the value of quality maintenance and utilizing licensed and certified technicians.
- Updated both residential and commercial program websites with information sections for both customers and contractors.
- Participated in monthly Western HVAC Performance Alliance subcommittee meetings, discussing input and feedback regarding improvements of both Residential and Commercial programs.
- Held contractor forums to solicit direct input into program design improvement of both Residential and Commercial programs.
- Enhanced the Maintenance Planning System, software that supports commercial program customers and participating contractors.

## **6. HVAC Workforce Education & Training:**

The program offers education and training opportunities targeted at all levels of the HVAC value chain to close training gaps at all levels of the industry.

Strategies implemented in 2012 included the following:

- Continued partnerships with training organizations to expand technician training opportunities in both classroom and lab settings.
- Continued to work collaboratively with other IOU partners and industry stakeholders (largely through the WHPA) to pursue CLTEESP objectives.
- Worked closely with program implementation providers to ensure succinct, applicable, and measurable training that was built on industry standards and supported program goals.
- Cultivated partnerships with industry stakeholders (i.e. WE&T providers and Certification Bodies) to elevate skills of existing workforce and collaborated with workforce development organizations provide outreach opportunities to k-12, under-represented groups, and veteran organizations.
- Continued focus on HVAC training needs for the next program cycle, utilizing work of previous needs assessment.

## **CODES AND STANDARDS**

The Codes and Standards (C&S) Program saves energy by influencing improvements in energy efficiency regulations, improving compliance with existing codes and standards, and working with local governments to develop ordinances that exceed statewide minimum requirements. C&S program activities extend to all buildings and potentially any appliance in California, for both advocacy and compliance improvement. The C&S program aggressively supports the goals of the Strategic Plan, which highlights the role of C&S in meeting Assembly Bill (AB) 32 (Stats 2006, Ch. 488) objectives.

The C&S Program consists of four subprograms: Building Codes Advocacy, Appliance Standards Advocacy, Compliance Enhancement and Reach Codes.

Coordination of internal and external C&S work is conducted as part of ongoing work. For example, development of Codes and Standards Enhancement (CASE) studies and US Department of Energy (USDOE) letters entail research, analysis, and coordination that encompass potentially any internal IOU program or activity, and collaboration with numerous state and national entities. Likewise, compliance improvement and reach code activities are coordinated internally and externally around specific initiatives. Coordination between IOUs is through quarterly meetings and various weekly calls. C&S IOU staff share information with other internal groups to support collaboration and assist with integrated portfolio planning.

### **1. Building Codes Advocacy Subprogram**

The Building Codes Advocacy subprogram primarily targets improvements to Title 24 Building Efficiency Regulations that are periodically updated by the CEC. The subprogram also seeks changes to national building codes that impact CA building codes. Advocacy activities include, but are not limited to, development of code enhancement proposals and participation in public rulemaking processes. The program may coordinate with or intervene in ratings organizations that are referenced in Title 24 (e.g., the National Fenestration Rating Council, and the Cool Roof Rating Council).

In 2011, the statewide IOU team finalized and docketed 56 CASE studies for the 2013 Title 24 rulemaking proceeding. In 2012, the statewide team continued its advocacy for the changes proposed in these CASE studies during the rulemaking period. As a result of these efforts, many code changes proposed by the statewide team were adopted by the CEC in May 2012. The statewide IOU team provided extensive support to CEC for post-adoption implementation: compliance manuals, software, repository, and related implementation resources.

## **2. Appliance Standards Advocacy Subprogram**

The Appliance Standards Advocacy subprogram targets both state and federal standards and test methods: improvements to Title 20 Appliance Efficiency Regulations by the CEC, and improvements to Federal appliance regulations by the USDOE. Advocacy activities include, but are not limited to, development of Title 20 code enhancement proposals and participation in the CEC public rulemaking process, USDOE comment letters based on IOU research and analysis, and participation in direct negotiations with industry. Additionally, the program monitors state and federal legislation and intervenes, as appropriate.

In 2012, the statewide team supported CEC efforts which adopted standards for battery charger systems in January, 2012, and conducted research and analysis in support of future CEC rulemakings. Additionally, the statewide team conducted research and analysis on numerous federal standards and submitted comments:

- Submitted 17 letters to DOE on 16 rulemakings.
- Submitted 5 letters to EPA on 4 ENERGY STAR specification processes.
- Submitted 2 letters (ASHRAE and FTC) on 2 standards development activities.

## **3. Compliance Enhancement**

Compliance Enhancement includes Extension of Advocacy (EOA) elements of building and appliance standards subprograms, and the Compliance Enhancement Subprogram (CEP). While EOA targets improvements in compliance with building or appliance efficiency regulations and development of compliance infrastructure, CEP supports local government process improvements. Compliance improvement in buildings is achieved through education, training, and other activities targeting building departments and other building industry actors responsible for compliance. Activities may include development of tools and other elements of infrastructure that serve multiple compliance enhancement objectives. Improvements in compliance with appliance efficiency regulations are achieved through communications, outreach, and other activities targeting manufacturers, retailers, and other California suppliers.

In 2012, the statewide C&S team delivered 79 role-based training sessions, continued a compliance improvement advisory group (CIAG) to provide industry guidance to IOUs, and supported improvements to certified energy analyst (CEA) examinations. The C&S team also completed the statewide building department Title 24 energy code compliance best practices program which explored in depth the enforcement barriers faced by seven representative local building departments and developed implemented and evaluated customized tools and processes to help improve code compliance.

## **4. Reach Codes Subprogram**

The Reach Codes subprogram provides technical support to local governments that wish to adopt ordinances that exceed statewide Title 24 minimum energy efficiency

requirements for new buildings, additions, or alterations. Support for local governments includes research and analysis for establishing performance levels relative to T-24 and cost-effectiveness per Climate Zone, drafting of model ordinance templates for regional consistency, and assistance for completing and expediting the application process required for approval by the CEC. The subprogram also supports local governments that seek to establish residential or commercial energy conservation ordinances for existing buildings.

In 2012, the IOUs continued to provide support for local governments through cost effectiveness studies, review of ordinances, and process support. By the end of the program cycle, 34 local governments adopted Reach Codes and completed the required CEC approval process. Local government reach codes were typically based on a percent above state building code.

## ***EMERGING TECHNOLOGIES***

The statewide Emerging Technologies Program (ETP) is designed to support increased energy efficiency market demand and technology supply (the term supply encompasses the breadth, depth, and efficacy of product offerings) by contributing to the development and deployment of new and underutilized measures—including technologies, practices, and tools—and by facilitating their adoption as measures supporting California's aggressive energy and demand savings goals.

The ET program includes the following subprograms: Technology Assessments, Demonstration Showcases, Scaled Field Placements, Market and Behavioral Studies, Technology Development Support, and Technology Resource Incubation & Outreach (TRIO).

Strategies implemented in 2012:

- Accelerated the introduction of EE technologies and analysis tools not widely adopted in various California markets.
- Verified the performance of technologies in the laboratory under control conditions, as well as in the field.
- Developed computer simulation tools to calculate the energy savings and demand reduction for various energy measures.
- Transferred assessment results to EE programs for use in creating energy measures.
- Transferred acquired knowledge to stakeholders as well as engineering and design communities.
- Conducted workshops for both internal and external customers.

- Coordinated with IOUs and external entities through the Emerging Technology Coordinating Council (ETCC).
- Continued to use the statewide database for tracking and reporting ET projects.
- Hosted two ET Open Forums to solicit technologies from the technology development community.
- Organized successful 2012 ET Summit in Pasadena California.

## **1. Technology Assessments (TAs) Subprogram**

Through the Technology Assessment element of ETP, energy-efficient technologies measures that are new to the market (or underutilized for a given application) were evaluated for performance claims and overall effectiveness in reducing energy consumption and peak demand.

Strategies implemented in 2012:

- Collaborated with many IOU and non-IOU partners and scanned a wide variety of sources to identify suitable assessment candidates.
- Used the statewide database to report project activities on a quarterly basis.
- Actively engaged the EE program and other program stakeholders.
  - Transferred acquired knowledge to customers, engineering and design communities.
  - Transferred assessment results to EE programs as an energy savings measure.
  - Worked with account managers and account executives to help keep their customers informed.
- Provided information to internal stakeholders from assessments that can help the IOUs' IDSM resource acquisition programs develop new measures or revise/integrate existing measures.
- Used a screening and scoring system to select the best TA candidates. Producing reports describing TA results, conclusions, and recommendations.

## **2. Scaled Field Placements (SFP) Subprogram**

Scaled Field Placement projects were implemented in one of two capacities: 1) placing technologies at a number of customer sites as a key step to gain market traction and possibly gain market feedback, or 2) testing of measure approaches / potential incentive structures. Typically, these technologies have already undergone an assessment or similar evaluation to reduce risk of failure.

Strategies implemented in 2012:

- Scanned, screened and prioritized a wide variety of sources and coordinated closely with EE programs to identify measures suitable for SFPs.
- Developed a strategic communication plan to promote project exposure, stakeholder awareness and public information dissemination.
- Launched SFP efforts.

## **3. Demonstration Showcases (DS) Subprogram**

The DS element was designed to provide key stakeholders the opportunity to "kick the tires" on proven combinations of measures that advance ZNE goals. DS are awareness-generating projects that may expose EE measures on a systems level to stakeholders, whether the general public or a targeted audience, in real-world settings, thus creating broad public and technical community exposure and increased market knowledge. These potentially large-scale projects expose measures to various stakeholders using real-world applications and installations. Key attributes of DS are that they are open to the public and/or stakeholders and highlight a systems approach rather than an individual approach.

Strategies implemented in 2012:

- Scanned, screened, and prioritized a wide variety of sources and coordinated closely with EE Programs for measures suitable for DS.
- Developed a communication plan to promote project exposure, stakeholder awareness, and public information dissemination.
- Demonstrated the technologies in actual field conditions.

## **4. Market and Behavioral Studies (MBS) Subprogram**

The MBS Program is designed to perform targeted research on customer behavior, decision making, and market behavior to gain a qualitative and quantitative

understanding of customer perceptions, acceptance of new measures, market readiness and potential for new measures.

Strategies implemented in 2012:

- Performed primary and/or secondary research through the statewide partnership program to gain market insights.
- Coordinated with the statewide ETCC stakeholders.

## **5. Technology Development Support (TDS) Subprogram**

The TDS Subprogram was designed to allow the ET Program the opportunity to lend assistance to private industry in the development of technologies. Although product development is the domain of private industry, there are opportunities where IOUs are well qualified (or in a strong position) to undertake targeted, cost-effective activities that provide value in support of private industry product development efforts. This support increases market readiness, decreases innovator uncertainties, and allows the ET program to have input. The ET program looks for targeted opportunities to support EE product development.<sup>5</sup> Product development is the process of taking an early-stage technology, or concept, and transforming it into a saleable product.

Strategies implemented in 2012:

- Reviewed TAs and other element projects.
- Stayed abreast of statewide lighting and HVAC initiatives.
- Worked with C&S to perform evaluations of technologies to understand upcoming standards.
- Collaborated with industry directly and through partners, such as the Western Cooling Efficiency Center (WCEC) and the California Lighting Technology Center (CLTC), to provide targeted support for technology development.
- Conducted TDS projects.

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<sup>5</sup> Product development is the process of taking an early-stage technology or concept and transforming it into a saleable product.

## **6. Business Incubation Support - Technology Research Incubator Outreach (TRIO) Subprogram**

The TRIO is a statewide program that provides support and networking for EE and demand response entrepreneurs, investors, and universities to provide participants the necessary perspective and tools to work with IOUs and ultimately introduce new EE measures to the marketplace. TRIO helps to accelerate the successful development of technologies through an array of engineering support, resources and services, all of which are developed and orchestrated by TRIO and offered both through TRIO and its network of contacts.

Strategies implemented in 2012:

- Collaborated and educating educated innovators from universities and other research institutions.
- Collaborated with the ETCC and IOUs on various activities, including Small Business Administration (SBA) and the Small Business Innovation Research (SBIR), and Cleantech Open.
- Developed business relationships with investors who were interested in funding cost-effective EE measures.
- Provided symposiums on “how to do business with utilities.” These workshops helped to educate the investor and technology communities on the requirements necessary to do business with utilities.

## ***WORKFORCE EDUCATION AND TRAINING***

The Statewide Workforce Education and Training (WE&T) Program represents a portfolio of education, training and workforce development, planning and implementation funded by or coordinated with the IOUs. Following the adoption of the Strategic Plan, D.09-09-047 subsequently made the statewide WE&T program responsible for the development, planning, and implementation of three subprograms: Centergies, Connections and Strategic Planning and Implementation.

### **1. Centergies Subprogram**

This subprogram is organized around market sectors and crosscutting segments to facilitate workforce education and training. PG&E’s three Energy Centers (Pacific Energy Center, Stockton Training Center and the Food Service Technology Center) represent the largest component of the WE&T Program. Included in this subprogram are educational seminars, tool loans, technical consultations and outreach events. Such Centergies activities allow green workforce candidates to explore energy

efficiency, integrated demand-side management technologies, and resource management techniques.

One of the recommendations from an EM&V study from Opinion Dynamics Corporation (ODC) was to incorporate more adult learning principles into energy center training sessions. In 2012, PG&E implemented the recommendations from ODC and an adult learning expert to improve several training sessions. PG&E also offered a few classes on-demand and as web simulcasts to better serve people who were not able to attend classes at the times and locations they were offered.

PG&E's Energy Centers continued to restructure programs to align with the Needs Assessment described in the Strategic Planning and Implementation Subprogram section below. This realignment includes reaching out to new partners in the energy efficiency, demand response, and distributed generation fields.

In 2012, PG&E Centergies partnered with IHACHI to provide installation and diagnostic training of HVAC equipment for 342 of its membership, primarily HVAC mechanics in Northern California, over 8 workshops. These workshops were held after work hours and the interest resulted in full enrollment and waitlists for every workshop. These workshops will continue to be offered in 2013.

PG&E Centergies also collaborated with two partnering Community Based Organizations (CBO) to develop an articulated version of the current Energy Savings Assistance Program that will enable these CBOs to provide a significant portion of the Energy and Weatherization Specialist training currently required for participation in this program. This collaboration will allow members of disadvantaged communities, served by the CBOs, to become prequalified for employment by contractors participating in the ESA Program. The first cohort of trained students is scheduled to begin the articulated training in May 2013.

The ground work laid in 2012 with the K-15 school age participants, culinary schools, and community colleges will provide a more robust workforce education program in 2013 and beyond. A number of unified school districts, culinary academies and community colleges are incorporating our curriculum into their class offerings, pushing their sustainability accountability, and creating green jobs in the food service industry.

Centergies program implementation plan (PIP) accomplishments and targets for 2012 include: Seminars—525 completed towards a target of 401; Consultations—1,684 towards a target of 1260; Tool Loan Transactions—1,170 towards a target of 1,235 transactions; Events/Outreach—345 towards a target of 300. Finally, total participant count for seminars and FSTC Industry Outreach in 2012 was 19,497. 182 of the

training seminars met the statewide definition of Integrated Demand Side Management, representing a 12% increase from 2011.

As part of a statewide effort in 2012, PG&E Centergies Program offered Building Operator Certification training sessions and webinar series to 101 commercial building operators and engineers. These participants are in addition to the non-BOC trainings included above. Employers that had their building operators participate in BOC trainings include General Services Administration (GSA), Able Engineering Services, Cal Poly San Luis Obispo, County of Marin, and ABM Engineering Services. Furthermore 89 building operators renewed their certifications.

## **2. Connections Subprogram**

The WE&T K-12 Subprogram is organized around downstream and upstream IOU relationships with the educational sector, entry and intro-level community-based training efforts that support workforce development in energy efficiency, energy management and new emerging green careers. This subprogram focuses on energy efficiency, the nexus of water, demand response, distributed generation, the impacts on the environment related to the production of energy global warming, greenhouse gas emissions and green career awareness/exploration and preparation. All curriculum materials are developed or enhanced to incorporate these concepts.

The subprogram includes the statewide PowerSave Green Campus program managed by The Alliance to Save Energy and is offered at 16 universities and colleges (seven in PG&E's service area) with nearly 100 participating interns. Green Campus engages students in building pathways into green careers and realized measurable energy savings (saved an annual average of 13,355,306 kWh per campus). It infused energy and energy efficiency concepts into academic curricula, and promoted energy efficiency awareness throughout the campus community with an average of 5,551 people covered per campus per term. Work will continue through 2013.

PEAK is a K-12 student statewide training program providing education curriculum on the science and management of energy use. The curriculum materials were recently revised to include the green career awareness and exploration as well as the impacts of energy generation and demand response on the environment, including greenhouse gas emissions. PEAK is also focused on recruitment efforts in minority or low income, Title 1 school districts. In 2012, in PG&E's service area, of the 119 schools that were enrolled, 54% were Title 1 public schools (target was 50%). PEAK participated in 31 collaborations with 21 partnerships with educational institutions, local governments, and other non-profits.

### **3. Strategic Planning and Implementation Subprogram**

The WE&T Strategic Planning and Implementation sub-program involves the management and execution of several strategic statewide planning tasks initiated by the Strategic Plan. These include forming an IOU/CPUC WE&T Task Force; conducting a needs assessment study; facilitating annual WE&T public meetings; and creating a WE&T-specific web portal.

The IOU/CPUC WE&T Task Force met roughly quarterly in 2012, providing a forum to share progress on various WE&T issues, and to cultivate relationships with stakeholders who have a vested interest - or particular subject matter expertise - in statewide WE&T issues.

Completing the needs assessment study, which prioritized the workforce strategies needed to reach the state's energy efficiency goals, was a priority for this sub-program in 2011. After soliciting public comments and engaging in public dialogue, the IOUs spent much of 2012 working to implement the study's findings, including taking a sector strategy approach with WE&T training and curriculum development and building expanded collaborations with industry, labor, education and government stakeholders. Notably, five new sector strategies launched in 2012, with successful "kick-off" events attracted hundreds of new partners. These included the Energy Workforce Sector Strategy (EE professional workforce focus); the K-Post-secondary Energy Education Sector Strategy, the Statewide HVAC Sector Strategy, the Architecture Sector Strategy, and the Renewables Sector Strategy. PG&E continued to support the Building Operator Certification (BOC) program and the California Advanced Lighting Controls Training Program (CALCTP). PG&E is collaborating with other IOUs on 9 sector strategies.

Through this sub-program, the IOUs are regularly discussing expanded methods to accelerate training capacity in market growth areas, to provide employment onramps, and to more effectively support demand-side management workforce needs.

### **4. Energenius - Local Program**

Energenius is a local PG&E program which provides curriculum to K-8<sup>th</sup> grade students and teachers on energy efficiency, and conservation. New curriculum programs developed in 2012 included; a "Green Careers Resource Guide" for high school counselors, teachers, career advisors and other educators who want to introduce students to the world of green jobs and careers; "Water, Energy and the Environment" for grades 4-6; and "We Saved Energy Today" for preschool. New programs under development in 2013 include "Smart Energy Technologies" and "Renewables and Nonrenewable Energy Sources". Outreach efforts included attendance at 11 teacher

educational conferences where PG&E had a display of the materials and a targeted mailing to 18,500 teachers. More than 99,500 students received these educational materials, which represents 117% of goal (target 85,000 students). Of the 825 public schools that ordered these materials, 65% were Title 1 public schools (target was 50%). The program collaborated with 22 partners ranging from statewide and local educational organizations, California Department of Education, County Offices of Education, local museums and preschool and after school program coordinators.

## **5. Green Pathway High School Pilot Program – Local Program (Green 360)**

Green 360 pilot is a Green Workforce Development program targeting high school students in PG&E service area. Green 360 addresses the California Long Term Strategic Plan and the WE&T Needs Assessment goals of integrating career development into K-12 curriculum as well as expanding collaborations across business, education, training, and government sectors.

The Green 360 goal is to inspire more students to pursue green careers and contribute to green solutions. The program aims to enhance students' success by reducing false starts due to unclear goals and inadequate career planning. On their path to success, students develop the skills and understanding they need in order to make informed choices. They identify and create their pathway to a green career that may include related internships, apprenticeships, and mentorships.

Green 360 multi-week course offers students in high school, college and community-based organizations (CBOs) opportunities to explore and prepare for green careers. The course brings a green career and workforce context to existing classroom curricula. It integrates career preparation information, experiences, and skill development with environmental sustainability and related green employment opportunities. The course embeds the U.S. the Interest Profiler Inventory and the U.S. Department of Labor jobs database, including green job profiles in a student friendly format. Throughout the course, green professionals engage and guide students toward green careers and workforce opportunities. The online community enables high school students to network and learn about green opportunities through Green Guru and Career Coach blog posts and interactions with representatives of green education and training resources.

The pilot involved schools and organizations from seven diverse geographic and socioeconomic counties in the San Francisco Bay Area. School programs include Green Academies, Regional Occupational Programs, Career Technical Education, and Advanced Environmental Science classes.

During 2012, Green 360 developed and beta tested the online course, community website, the communications platform. The program:

- Created the multi-week online course.
  - Tested and solicited feedback on the course with 160 students in six classrooms and three regions.
  - Developed the community website engaging Green Gurus and Coaches as bloggers about green work.
- Conducted outreach and marketing that targeted cross-sector stakeholder groups in seven counties surrounding the Bay Area.
- Collaborated with multiple programs with the California Department of Education and other government agencies. PG&E identified classrooms, organizations, and students to test and provide feedback to developers.

## ***INTEGRATED DEMAND SIDE MANAGEMENT***

### **Program Description**

The Strategic Plan recognizes the importance of integration of demand-side management options including EE, demand response, and distributed generation as fundamental to achieving California's strategic energy goals. To support this initiative, the IOUs have identified integrated demand-side management (IDSM) as an important strategic DSM policy priority and have proposed a series of activities, pilots and other programs in response to the Strategic Plan DSM Coordination and Integration Strategy.

### **Program Strategy**

An IOU and Energy Division Statewide Integration Task Force was formed in 2010 and has continued coordinating activities that promote, in a statewide-coordinated fashion, the strategies identified in the Strategic Plan and the eight integration directives described in the EE decision as follows:

1. Development of a proposed method to measure cost-effectiveness for integrated projects and programs including quantification and attribution methods that includes GHG and water reductions benefits and the potential long-term economic and electric/gas hedging benefits.
2. Development of proposed measurement and evaluation protocols for IDSM programs and projects.
3. Review IDSM enabling emerging technologies for potential inclusion in integrated programs.
4. Development of cross-utility standardized integrated audit tools using PG&E's developed audits as a starting point.
5. Track integration pilot programs to estimate energy savings and lessons learned and develop standard integration best practices that can be applied to all IOU programs based on pilot program evaluations and the results of additional integration promoting activities (i.e., EM&V and cost-benefit results).

6. Develop regular reports on progress and recommendations to the CPUC.
7. Organize and oversee internal utility IDSM strategies by establishing internal Integration Teams with staff from EE, DR, DG, marketing, and delivery channels.
8. Provide feedback and recommendations for the utilities' integrated marketing campaigns including how the working group will ensure that demand response marketing programs approved as category 9 programs are coordinated with EE integrated marketing efforts.

#### Strategies Implemented in 2012:

- Further efforts on developing integrated cost effectiveness and EM&V methodologies are on hold pending direction from the Energy Division.
- The Task Force tracked multiple integrated emerging technologies and reviewed various programs, projects, IDSM Pilots and activities to identify integration efforts and opportunities, as well as developed best practices.
- Pilot program efforts include:
  - Zero Net Energy Program; in coordination with EM&V, the other IOUs, and the CPUC, Heschong Mahone Group completed the "Road to ZNE" study in Q4 2012.  
<http://www.pge.com/myhome/saveenergymoney/energysavingprograms/zne/pilotprogram/>
  - Green Communities
    - To date the government partners have completed 144 municipal operations GHG inventories and 88 community-wide inventories.
    - The "pilot" has concluded and has been incorporated into the overall Government Partnership program for 2013-2014.
- The IOUs submitted four joint quarterly reports for 2012, including an Executive Summary section, to provide Energy Division staff with updates on the eight IDSM directives. All 2010- 2012 quarterly reports were uploaded and available for viewing on EEGA.
- The statewide IDSM Task Force held regular coordination phone calls and met in person on a quarterly basis to review the status of the various support activities for this IDSM initiative.
- The IOUs have delivered about 475 integrated collateral pieces, campaigns, outreach events, and website efforts to residential and business customers that promote multiple programs across EE, DR, DG and/or AMI.
- The SW Online Integrated Audits team coordinated to deliver a consistent online integrated audit tool that works with each IOU interface and educates customers on managing their energy use costs. The IOUs also enhanced existing tools to include solar requirements.
  - PG&E completed their Residential tool in March of 2012 and the Non-Residential tool September 2012. Both meet the CPUC's business requirements.

- The SW Integrated Marketing team meets on a regular basis to discuss integrated efforts, best practices and to identify opportunities for coordination.

## ***MARKETING, EDUCATION AND OUTREACH***

In 2010-2012 the purpose of the Statewide Marketing, Education & Outreach (Statewide ME&O) program was to increase utility consumer awareness and participation in cost-effective energy-saving activities offered by the utilities. ME&O promote behavior changes that result in energy management efforts that save energy and reduce greenhouse gas (GHG) emissions in coordination with demand response and renewable self-generation options. To be successful, ME&O must move consumers through a transitional process from awareness and knowledge of energy efficiency to action.

The IOUs engaged in this statewide effort, as ordered in D.09-09-047, until Commissioner Ferron issued an *Assigned Commissioner's Ruling Regarding Statewide Marketing and Outreach Program* on October 13, 2011, suspending all Statewide ME&O activities until Commission Staff could provide recommendations on how to revise the program.

On May 10, 2012, the Commission issued its Guidance Decision (D.12-05-015) directing the IOUs to discontinue the use of the Engage 360 brand and develop a strategy and budget for transitioning toward the use of Energy Upgrade California as a statewide umbrella brand for energy information and encouraging demand-side management actions by residential and small business consumers. Each IOU was asked to file an individual application no later than August 3, 2012 to determine the objectives and program performance metrics of the program going forward for the 2013-2014 period. PG&E was named the lead utility for the SW ME&O program and entered into a contract with CCSE to begin the transition offers, including coordinate of stakeholder input on and participation in the statewide program.

## **PROGRAM DESCRIPTIONS AND STRATEGIES –**

### **LOCAL PROGRAMS**

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#### ***ZERO NET ENERGY PILOT PROGRAM***

The Zero Net Energy (ZNE) Pilot Program is a PG&E local non-resource program which supports the Strategic Plan by initiating research, development, and demonstration (RD&D) projects that have aggressive energy efficiency goals and that plan to include on-

site clean distribution generation. Achieving zero net energy will require the implementation of a combination of building energy efficiency design features and on-site clean distributed generation that result in no net purchases from the electricity or gas grid, at the level of a single project seeking development entitlements and building code permits. The ZNE Pilot Program focuses primarily on residential and commercial new construction.

PG&E's ZNE program was detailed in Advice Letter 3078-G-B/3594-E-B and was approved June 11, 2010. The program budget and targets were revised as detailed in Advice Letter 3235-G-A/3901-E-A and approved February 14, 2012.

2012 strategies:

### **1. Zero Net Energy Communities Subprogram**

ZNE Communities offers design assistance and technical support to the owners and design teams of at least three community-scale, commercial and/or residential new construction projects. The subprogram targets mixed-use and multifamily complexes, advanced residential and commercial new construction, and transit-oriented development, generally at the early stages of the entitlement and design process, to help pursue energy and resource savings that normally fall outside of the scope of a typical program. The projects have been selected through a competitive process. Starting with current "state of the art" approaches, assistance and support progressively incorporates the results from the other ZNE subprograms, and cutting edge research from national laboratories, and other states' efficiency programs to continually update design and technical support progress towards true ZNE solutions.

In 2011, the ZNE team reviewed proposals from the teams of firms with expertise in the design and performance analysis of low energy and zero net energy projects. Three "ZNE Consultant" teams were chosen with specific expertise in community-scale, as well as three teams with expertise in commercial new construction, and two teams with expertise in residential new construction. The program put the ZNE Consultant teams under Master Service Agreements. In addition, the Zero Net Energy Pilot Program released a Request for Information (RFI) for the competitive selection of community-scale, commercial, and residential projects with aggressive energy efficiency and zero net energy performance goals. The program chose to move forward with four projects total (including community-scale, commercial, and residential), matched them with the "ZNE Consultant" teams selected in 2011, and began to scope the design and technical assistance to be provided to each project.

A second RFI was issued in February of 2012 to solicit additional project teams in need of expert zero net energy design and technical consultation. An additional six projects were

added for consultation assistance in 2012, bringing the total number of ZNE Pilot Program consultations to 10 (including community-scale, commercial and residential projects).

## **2. Zero Net Energy Demonstration Showcase Subprogram**

This subprogram has three key elements: 1) at least four residential and at least two commercial new construction consultation projects with design and technical assistance provided by PG&E; 2) case studies and performance monitoring of the completed projects and existing low-energy or zero net energy buildings; and 3) technical studies on at least four areas underrepresented in zero net energy technical strategy and policy.

As noted above, the ZNE Pilot Program released an RFI for the competitive selection of community-scale, commercial, and residential projects with aggressive energy efficiency and zero net energy performance goals in 2011, and another in 2012. Ten projects were selected to move forward (including community-scale, commercial, and residential), were matched with the “ZNE Consultant” teams selected in 2011, and began work on providing design and technical assistance to each project. While each project consultation reached a stage of completion by the end of the pilot program in December 2012, some consultation work has been selected as ongoing in 2013. Final reports of consultation work performed during the 2011 and 2012 time periods were submitted by each active Consultant team on behalf of each project in December 2012.

In addition in 2012, the ZNE Pilot Program completed four large technical studies in areas underrepresented in zero net energy policy and research, including 1) an exploration of DC systems for ZNE, 2) District systems for ZNE, 3) Incremental costs associated with ZNE for builders and/or homebuyers, and 4) Grid/utility impacts of distributed generation and NEM (this study was initiated in 2011 and completed in 2012; a public presentation of this study was held by the ZNE Pilot Program in 2012).

## **3. Zero Net Energy Technology Advancement Subprogram**

Per the revised program metrics, this program completed five technology assessments (in 2010) on technologies that have the potential to help projects reduce energy loads and meet zero net energy performance goals. The Zero Net Energy Technology Advancement subprogram worked with staff from the PG&E Technical Product Support group to identify technologies with the potential to help projects achieve zero net energy performance goals and complete five technology assessments. The technologies studied included: 1) heat pump water heaters; 2) evaporative condensers; 3) ground coupled heat pumps; 4) electrochromic windows; and 5) energy-recovery ventilators.

This subprogram also worked with staff from the PG&E EM&V group to compose statements of work and initial timelines for the two major reports to be conducted in

coordination with EM&V. In 2011, the Zero Net Energy Technology Advancement subprogram worked with staff from the PG&E EM&V group to draft a Request for Proposals (RFP) for the report on the roadmap to zero net energy residential and commercial new construction in California and another RFP for the study to assess the technical potential for achieving zero net energy buildings in the commercial and residential sectors in California. The project teams for each study were selected in coordination with other IOU EM&V staff at the end of 2011.

In 2012, the Zero Net Energy Technology Advancement subprogram worked with the project teams, PG&E EM&V staff, the CPUC and other IOU EM&V staff to complete these two large-scale studies. These studies will provide a foundation for further EM&V ZNE research.

#### **4. Zero Net Energy Design Integration Subprogram**

This subprogram develops and disseminates information on and best practices for the design of ZNE neighborhoods, communities, buildings, and homes through forums, workshops and classes, design competitions, and by engaging organizations such as the American Institute for Architects (AIA), the United States Green Building Council (USGBC), the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), and other stakeholders, including local and state policy, planning, and code officials.

In 2010, the Zero Net Energy Design Integration program initiated a number of education and outreach activities with stakeholders in the building design and energy efficiency education communities. This subprogram collaborated with staff from PG&E's Pacific Energy Center to develop a nonresidential zero net energy class series to be offered in collaboration with the San Francisco chapter of the AIA. The subprogram collaborated with staff from PG&E's Energy Training Center to develop a residential zero net energy class series.

In 2011, the Zero Net Energy Design Integration program offered a nonresidential zero net energy class series in coordination with the PG&E Pacific Energy Center and the San Francisco chapter of the American Institute of Architects (AIA SF). The program also offered a residential zero net energy series in coordination with the PG&E Energy Training Center. The program held its first public forum on "Innovative Funding Mechanisms to Drive ZNE Projects in California." The program also held its first zero net energy design competition, Architecture at Zero, managed by AIA SF.

In 2012, the Zero Net Energy Design Integration program redesigned its non-residential ZNE class series in coordination with Pacific Energy Center staff. The workshops were held at the Pacific Energy Center. A second public forum was hosted by the program at

the David Brower Center in Berkeley, with the topic “Zero Net Energy in Context: Achieving the ZNE Targets for California New Construction”.

The ‘Architecture at Zero’ competition for zero net energy architecture was produced by AIA San Francisco and the PG&E ZNE Pilot Program for a second year with a new site and a new ZNE design challenge. The competition is running for a third time in 2013.

In addition in 2012, the ZNE Pilot Program contracted with a local architect/ ZNE expert to complete case studies of three ZNE/ very high performance buildings, with a focus on technical performance, ongoing commissioning refinements and operations. These case studies will be published by PG&E in 2013 as part of a series.

In 2012, the ZNE Pilot Program applied to the Berkeley Energy Resource Collaborative (BERC) Innovative Solutions program (BIS), an initiative that matches multi-disciplinary U.C. Berkeley graduate students to real-world “clients”. The ZNE Pilot Program approached the BIS program with a problem statement related to exploring financial mechanisms that would assist and/or remove barriers for developers seeking to develop ZNE projects. The ZNE Pilot Program was matched with a group of four students who produced a short report in December 2012, based on their research and interviews.

## ***ON-BILL FINANCING – ENERGY EFFICIENCY RETROFIT LOAN PROGRAM***

PG&E’s On-Bill Financing (OBF) Program offers a financing product designed to facilitate the purchase and installation of qualified energy efficiency retrofit measures by nonresidential customers. The program is offered in conjunction with other PG&E rebate and incentive programs in order to break down the first-cost barriers which often prevent adoption of energy efficiency measures.

The OBF program builds on the success and lessons learned from similar OBF programs in New England and at the other California IOUs, as well as PG&E’s Small Business Energy Edge off-bill pilot program of 2006-2007. Approved customers who install qualifying energy efficiency retrofit projects are eligible to receive the full rebate or incentive offered through PG&E’s energy efficiency programs along with zero interest, zero penalty loans to finance the balance of qualifying project costs. Loan terms range from five years for commercial customers and up to ten years for government agency customers. The eligible loan amount is based on the project cost, less incentives or rebates, up to the loan maximums of the OBF product and within the loan term thresholds.

An \$18.5 million loan pool was established to fund the energy efficiency retrofit loans during the 2010-2012 program cycle. This loan pool functioned as a revolving fund, with

loan repayments cycled back through the fund and made available for additional loans. The loan pool funds were authorized as part of PG&E's 2010-2012 energy efficiency portfolio to be recovered from customers through public purpose program rates. OBF loan pool funds were not included in PG&E's overall portfolio cost-effectiveness calculations.

In 2012, PG&E's OBF program expanded significantly due to increased customer awareness and internal process improvements. Although OBF was a local PG&E program in 2010-2012, the IOUs worked collaboratively to ensure statewide consistency in key program design efforts. In an effort to improve operational efficiency and customer satisfaction, the statewide OBF Program engaged a consulting firm to assist with a review of the current OBF Program and to provide a future state plan with recommended process improvements. As a result, the statewide OBF Program made a number of process improvements that have decreased application processing turn-around time and increased customer satisfaction. Some of these process improvements included consolidating the two-tier credit review process into one payment history review and the standardization of internal and external OBF application documents.

Due to the internal process enhancements implemented by the statewide OBF program management and an increase in customer awareness, PG&E received large increases in OBF applications and loan originations. By the end of 2012, 179 loans were originated for a total of \$8,670,318.61, an increase of over 1000% year-over-year in both loan volume and loan origination dollar amount. In total over 2011 and 2012, 192 loans were originated for a total origination amount of \$9,361,321.54.

## ***LOCAL DSM COORDINATION AND INTEGRATION***

### **Program Description**

PG&E's Local Integration Program focused on internal coordination of teams, marketing approaches and collateral, education and training of sales forces and delivery channels, tools needed to support integrated offerings and support of the Statewide IDSM Task Force. Subprograms include an integration team, and integrated marketing and outreach, education and training (external), sales training (internal), audit, and support tools.

Strategies Implemented in 2012:

- PG&E continued internal integration team meetings with staff from Energy Efficiency, Demand Response, Distributed Generation, Low Income Energy Efficiency, Dynamic Pricing, SmartMeter, green programs, marketing and outreach,

Energy Solutions and Service, and delivery channels including trade professionals, third parties, and government partnerships. PG&E developed regular internal tracking reports to monitor activities, worked to establish best practices, and set up meetings to follow up, monitor and report on integrated activities.

- PG&E worked with the larger statewide Marketing, Education, and Outreach effort and the internal marketing teams to ensure integrated messaging and coordination were being offered to customers. PG&E worked to execute marketing campaigns and to provide collateral to the various customer segments to inform customers of demand side resources (including Energy Efficiency, Demand Response, Distributed Generation and SmartMeter).
- Offered 30 integrated classes offered through the training centers. ETC training centers focusing on integration of programs and systems offered classes include “Integrating Energy Efficiency & Renewables in Home Retrofits.”
- Trained sales representatives from all appropriate delivery channels and program staff on IDSM integration to improve the sales effectiveness of programs.
- Emerging Technologies (ET) Summit to discuss energy efficiency, demand response, customer-facing smart grid, and related topics with thought-leaders in ET.
- Collaborative efforts between program and field engineering staff to develop an integrated audit template to be used for customer audits that includes EE, DR and DG recommendations.
- Delivered integrated marketing collateral pieces, campaigns, outreach events, and website efforts. Examples include:
- PG&E completed its pilot residential integrated effort, “Energy House Calls”, which was created to integrate key residential programs and initiatives under a united campaign. The objective was to demonstrate the benefits of PG&E products with relatable successes of real customers, leading to: raised awareness of PG&E’s residential portfolio of programs, products and services, and Increased customer participation in programs featured in the campaign.
- PG&E developed an online “reality” series that featured real families benefiting from various PG&E products, programs and services. It was supported with media across multiple channels. Season 1 was piloted in four geographical areas and ran from August 3 – November 16.
- PG&E IDSM Marketing Bus
  - Time-Varying Pricing - Custom Rate Comparison provided a comparison of customers’ bills on their existing flat rate vs. their pending TOU rate and a Peak Day Pricing Rate; includes customized tips by segment with load shifting (DR) and energy efficiency recommendations. Two versions were created with messaging tailored to TOU savers and non-savers; they were mailed in December to approximately 12,500 recipients.
  - Identified best practices for delivering integrated projects in the field that

include (but are not limited to) knowing the customer, program participation history and their industry to offer the right solutions, meeting the customer in person so other measures can be identified and recommended from visual inspection, and creating a team approach that includes the appropriate subject matter experts along with customer decision makers and corporate representatives as appropriate.

## **PROGRAM DESCRIPTIONS AND STRATEGIES - GOVERNMENT PARTNERSHIPS**

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### ***INSTITUTIONAL PARTNERSHIPS***

Institutional Partnerships are designed to create working relationships among the four California IOUs, agencies of the State of California and/or state educational institutions. The objective of the Institutional Partnerships is to reduce energy usage through facility and equipment improvements and share best practices among state institutions. There were four Institutional partnerships in 2012.

PG&E's Institutional Partnership portfolio focused on achieving energy savings and supporting the key Strategic Plan goal of demand-side management (DSM) integration and coordination, which includes improving regulatory coordination, establishing integration procedures, and piloting DSM integration programs. The Institutional Partnerships also concentrated on innovative delivery channels and funding mechanisms to meet current economic conditions and achieve program integration and savings.

#### **California Community Colleges (CCC)**

The California Community Colleges/Investor Owned Utility Energy Efficiency Partnership is a unique, statewide program to achieve immediate and long-term energy savings and peak demand reduction within California's higher education system. The funding of nearly \$10M for the 2010-2012 program cycle continued the progress established during the 2006-2008 Energy Efficiency Program cycle and 2009 Bridge Period to create a permanent framework for sustainable, comprehensive energy management at Community College campuses served by PG&E.

In the fourth quarter of 2012, the CCC/IOU Partnership continued to move forward with outreach and marketing, project identification, and project implementation activities so as to build on the momentum gained during 2006-2008 and the 2009 Bridge period. Campuses were encouraged to complete projects originally forecasted for 2012 so as to maximize the number of projects completed in the three year 2010-2012 program cycle. Remaining active projects will continue to progress and complete in the next 2013-2014 program cycle.

## **University of California and California State Universities (UC/CSU)**

The University of California/California State University/Investor Owned Utility Energy Efficiency Partnership is a unique, statewide program to achieve immediate and long-term energy savings and peak demand reduction within California's higher education system. The PG&E incentive funding of approximately \$17.7M for the 2010-2012 program cycle helped continue the permanent framework established in previous program cycles for sustainable, comprehensive energy management at campuses served by the IOUs.

The program has a hierarchical management structure to ensure successful implementation. The Management Team meets every three weeks to conduct business at the management level, whereas the Executive Team meets quarterly to discuss overall program status and policy issues. The Partnership also has a Training and Education Team that organizes various energy efficiency trainings targeted to university campuses. Because University of California Office of the President and California State University Chancellor's Office each has members on both the Management and Executive Team, the campuses are well supported in their efforts to implement energy efficiency projects. This top-down communication approach has been successful in marketing program opportunities.

Members of the management team also meet on a regular basis to document implementation progress, identify and resolve issues, and drive project completion. The Program Administrator actively tracks project savings and schedule data in online tracking tool, and creates regular reports to show overall status of program or forecasts relative to goals.

With 2012 marking the end of the three year program cycle, the UC/CSU/IOU Management Team focused efforts on encouraging campuses to complete projects by December 31, 2012. Campuses were notified on a monthly basis of projects that were at risk of not completing in time for year-end accrual, therefore increasing awareness of project schedules in an effort to mitigate additional delays. Additionally, campuses were encouraged to complete projects featuring sun-setting measures that will no longer be eligible for incentives in the 2013-2014 program cycle.

Overall, the UC/CSU/IOU Partnership exceeded all of its goals for the 2010-2012 program cycle. For PG&E savings totaled nearly 7,400 kW, over 58.8 million kWh, nearly 2.7 million therms.

## **State of California Partnership**

The State of California energy efficiency partnership program shares energy efficiency best practices and implements energy efficiency projects for immediate and long-term energy savings and peak demand reduction at state-owned facilities served by the IOUs with partners.

The partnership assists state agencies, under the executive branch of the state government, to comply with Executive Order S-20-04 (Green Building Initiative). The effort will help reduce the amount of energy the state purchases off the electrical grid by 20 percent by the year 2015.

This statewide partnership provides custom incentives and core programs for projects implemented in California's state owned and leased buildings. Additionally, the IOUs provide services for education and training activities. An objective of the partnership is to integrate and coordinate various utility programs to leverage incentives and encourage customers to expand their focus beyond energy efficiency. The activities achieve cost-effective energy savings through energy efficiency retro-commissioning, equipment retrofits, new construction, third party programs, demand response programs, and any applicable self-generation programs. The partnership also seeks opportunities to integrate utility incentives with financing options. This includes state financing through the Energy \$mart program (currently on hold), the American Recovery and Reinvestment Act Revolving Loan Fund, or the OBF Program to increase program participation in the partnership effort and encourage additional energy projects.

### **California Department of Corrections and Rehabilitation**

The California Department of Corrections and Rehabilitation (CDCR) Partnership is a customized statewide energy efficiency program that accomplishes immediate, long-term peak energy and demand savings, and establishes a permanent framework for a sustainable, long-term, comprehensive energy management program at the CDCR institutions served by the IOUs.

This program capitalizes on the vast opportunities for efficiency improvements and utilizes the resources and expertise of CDCR and IOU staff to ensure a successful and cost-effective program that meets all objectives of the CPUC. The program also leverages the existing contractual relationship between CDCR and Energy Service Companies (ESCOs) to develop and implement energy projects in CDCR facilities.

The program is modeled after the UC/CSU partnership program, however assumes greater financial contribution from the CDCR.

## ***LOCAL GOVERNMENT PARTNERSHIPS***

PG&E's Local Government Partnership (LGP) program works with local governments and recognizes the roles they play in energy management: as a distinct customer segment with

its own unique challenges and needs related to implementing energy efficiency, as a comprehensive delivery channel for energy services to their communities, and as community leaders. These partnerships help meet the goals of the Strategic Plan. PG&E had partnerships serving 20 local governments or groups of governments in 2012.

### **Association of Monterey Bay Area Governments Energy Watch**

The Association of Monterey Bay Area Governments (AMBAG) Energy Watch is a partnership between AMBAG and PG&E. AMBAG is a Council of Governments that is governed by a twenty-four member Board of Directors comprised of elected officials. AMBAG Energy Watch region includes the Santa Cruz, Monterey and San Benito Counties and the eighteen incorporated cities. AMBAG EW serves PG&E's municipal, special district, non-profit, agriculture and residential customers. services include energy assessments and audits, technical assistance, assistance accessing low or no-interest financing, benchmarking assistance, and development of and assisting with implementation of regional energy action strategies.

Services provided by AMBAG include the Third Party/Government Partnership (3P/GP) Direct Install Program and the Moderate Income Direct Install (MIDI) Program.

AMBAG EW offers a robust municipal program, providing both turn-key and customized energy efficiency solutions for city facilities. AMBAG's municipal energy management

### **City of San Joaquin Energy Watch**

The City of San Joaquin Energy Watch (CSJEW) is a partnership between the City of San Joaquin and PG&E. CSJEW empowers this rural municipal government to take a leadership role in integrating utility energy efficiency programs and services into its portfolio of city services. In addition, this partnership targets government facilities, and the hardest-to-reach of the moderate-income residential and small business customers. CSJEW retrofits the city's municipal facilities, and provides energy audits, engineering assistance, project completion inspections, and educational programs.

Services provided by CSJEW include the Third Party/Government Partnership (3P/GP) Direct Install Program.

This program ended in December 2012 with all activities assimilated into the Fresno Energy Watch program.

### **East Bay Energy Watch**

East Bay Energy Watch is a collaboration among PG&E, local governments, and community-based energy service providers in the East Bay dedicated to providing innovative energy efficiency solutions for residents and businesses throughout Alameda

and Contra Costa Counties. Quantum Energy Services & Technologies (QuEST) serves as the partnership local administrator.

EBEW fosters a more integrated portfolio through the addition of new elements, increased coordination with PG&E's core and third party energy efficiency offerings, and a more comprehensive approach to implementing energy efficiency measures in the municipal sector.

Services provided by the East Bay Energy Watch include the Local Government Partner Commercial Direct Install Program, the Local Government Partner Residential Direct Install Program and the Municipal Implementation Team (MIT) Program.

### **Fresno Energy Watch**

Fresno Energy Watch (FEW) partnership provides comprehensive energy efficiency services to the City of Fresno, County of Fresno, and the cities throughout the County of Fresno. The program is managed by the City of Fresno Department of Sustainability and the Economic Development Corporation serving Fresno County.

FEW delivers cost-effective, comprehensive, and persistent energy savings through the leadership of the local government. The goals of the partnership are to provide comprehensive and integrated energy solutions, address community needs, and capture available energy savings. Locally based energy efficiency seminars are offered to expand the audience for energy efficiency. FEW also focuses on local energy policies that promote energy efficiency practices, codes, and standards.

Services provided by FEW include the Third Party/Government Partnership (3P/GP) Direct Install Program and the Moderate Income Direct Install (MIDI). In July 2012, the program added the Home Energy Tune-Up as a service to residential customers living in Fresno and Madera Counties. Home Energy Tune-Up was previously funded by federal stimulus dollars under the American Recovery and Reinvestment Act (ARRA). When ARRA dollars stopped coming to the City of Fresno, PG&E funded the program for the remaining six months of 2012.

### **Kern Energy Watch**

Kern Energy Watch is a unique cooperative partnership between PG&E, SCE, SCG, the County of Kern, and the partner cities within Kern County. The Partnership provides assessments and the direct installation of energy saving measures in qualifying residences, businesses, and municipal facilities throughout PG&E's service area in Kern County. The partnership also works to encourage the efficient use of energy by providing energy efficiency information at community events, by providing public and municipal education and training programs, and by providing audits and financial assistance to municipal customers for the energy efficient retrofit of municipal facilities.

## **Madera Energy Watch**

Madera Energy Watch (MEW) offers a range of energy efficiency options for commercial, small business and residential customers, as well as municipal facilities. MEW works with local contractors, builders, building departments, and others to install energy efficient equipment to reduce energy use. Locally based training programs are offered to expand the audience for energy efficiency. MEW also focuses on local energy policies that promote energy efficiency practices, codes, and standards. MEW delivers cost-effective, comprehensive and persistent energy savings among local MEW partners.

Services provided by MEW include the Third Party/Government Partnership (3P/GP) Direct Install Program. The program added the Home Energy Tune Up as a service to residential customers living in Fresno and Madera Counties. Home Energy Tune-Up was previously funded by federal stimulus dollars under the ARRA. When ARRA dollars stopped coming to the City of Fresno, PG&E funded the program for the remaining six months of 2012.

## **Marin County Energy Watch**

Marin County Energy Watch (MCEW) is a collaboration between the County of Marin Community Development Agency and PG&E to deliver cost-effective and comprehensive energy savings and incentives to local governments, businesses, schools, residential (single and multifamily), nonprofits, and special districts in Marin County. Services are delivered through three main program elements. The Marin Energy Management Team provides energy management services and assessments tailored to suit the unique needs of public agencies, municipal facilities, and schools in Marin County. The SmartLights Program provides start-to-finish technical assistance and energy assessments to nonresidential customers for lighting retrofits, and air conditioning and refrigeration system tune-ups. MCEW also works with California Youth Energy Services to deliver hardware installation, in-home energy assessments, and education to residential owners and renters while providing green jobs for local youth.

Services provided by MCEW include the Local Government Partner Commercial Direct Install Program and the Local Government Partner Residential Direct Install.

## **Mendocino County Energy Watch**

Mendocino County Energy Watch (MCEW) is a partnership between the Community Development Commission of Mendocino County and PG&E. MCEW offers a comprehensive portfolio of energy efficiency programs that target residential customers, municipalities, small businesses, and nonprofits.

Using a locally-driven approach, MCEW offers innovative energy efficiency programs and outreach services in one of the more sparsely populated counties in the state. Targeted market sectors include, single family and multifamily residential direct install, and commercial retrofit programs. The commercial program elements include a coordinated

direct install program for lighting and refrigeration, education and outreach, energy efficiency workshops, and comprehensive energy audits for public facilities and small and medium businesses.

Services provided by MCEW include the Third Party/Government Partnership (3P/GP) Direct Install Program and MIDI.

### **Napa County Energy Watch**

Napa County Energy Watch (NCEW) provides comprehensive energy efficiency services to municipalities, nonprofits, special districts, small and medium businesses, and residential customers. Sustainable Napa County serves as the local program administrator. Services include audits, retrofits, outreach, and education. NCEW's unique contribution towards energy conservation lies in its ability to integrate conservation strategies with broader sustainability ventures already underway in Napa County.

Services provided by NCEW include the Third Party/Government Partnership (3P/GP) Direct Install Program and MIDI.

### **Redwood Coast Energy Watch**

Redwood Coast Energy Watch (RCEW) Partnership provides education, technical assistance, and direct installation services for the small commercial, public agency, and residential market sectors. RCEW achieves energy savings through a comprehensive, locally-driven approach in Humboldt County. This partnership augments PG&E's historic efforts to deliver energy savings and achieves a higher level of market penetration in hard-to-reach areas by utilizing local staff expertise and resources to provide marketing, outreach, information, education, and technical assistance. Redwood Coast Energy Authority (RCEA) serves as the local administrator. RCEA is a Joint Powers Authority whose members include the County of Humboldt; the Cities of Arcata, Blue Lake, Eureka, Ferndale, Fortuna, Rio Dell, and Trinidad; and the Humboldt Bay Municipal Water District.

RCEW builds on its close working ties with local public agencies and uses local delivery channels including contractors, vendors, retailers, chambers of commerce, professional, service organizations, and environmental groups. RCEW provides comprehensive energy management services and incentives through three main program elements. The Small Business Direct Install Program offers hard-to-reach, small businesses with turnkey services as well as project management by a RCEA energy specialist. The Residential Program offers single-family homeowners no-cost energy assessments and installs a range of low-cost and no-cost measures while promoting PG&E's residential rebate program. RCEA also offers larger customers project management assistance with nonresidential retrofit projects.

Services provided by RCEW include the Small Business Energy Efficiency Program, a Residential Direct Install Program, a Non-Profit Energy Efficiency Program, and a Public Agency Energy Efficiency Program.

### **San Francisco Energy Watch**

San Francisco Energy Watch (SFEW) is a collaborative effort between the City and County of San Francisco and PG&E to deliver a broad spectrum of energy efficiency measures and savings for businesses as well as multifamily facilities in San Francisco. SFEW provides comprehensive energy management services and incentives through three main program elements. The Small Business Direct Install Program offers hard-to-reach, small businesses turnkey services, and complete project management by a program-assigned contractor. The Commercial Plus and Multi-family Plus Programs use a market-based, vendor-driven model to offer property owners and larger businesses technical assistance and energy assessments for installing a wide range of low-cost measures. SFEW also offers larger customers incentives for calculated, nonresidential retrofit projects.

Services provided by SFEW include the Local Government Partner Commercial Direct Install Program and the Local Government Partner Residential Direct Install.

### **San Joaquin County Energy Watch**

The San Joaquin County Energy Watch program was put on hold in early 2011 after efforts to secure a partnership contract with a local government were not successful. The program served customers while good faith efforts to work with San Joaquin County on a contract took place. The County ultimately declined to enter into contract with PG&E to serve as local program implementer. PG&E is working to identify other possible local governments or government associations to serve as lead local partner. Services provided by the San Joaquin City Energy Watch include the Third Party/Government Partnership (3P/GP) Direct Install Program.

### **San Luis Obispo County Energy Watch**

San Luis Obispo County Energy Watch is a partnership between PG&E, SCG, the County of San Luis Obispo, and the seven incorporated cities within San Luis Obispo County. The County of San Luis Obispo serves as the partnership implementer and the Economic Vitality Corporation of San Luis Obispo County provides a business outreach program.

The partnership provides assessments and the direct installation of energy saving measures to qualifying residences, businesses, and municipal facilities throughout the San Luis Obispo County service area. The partnership also works to encourage the efficient use of energy by providing energy efficiency information at community events, by providing public and municipal education programs, and by providing audits and financial assistance to municipal customers for the energy efficient retrofit of municipal facilities.

## **San Mateo County Energy Watch**

San Mateo County Energy Watch (SMCEW) is a partnership between the City/County Association of Governments of San Mateo County (C/CAG) and PG&E. SMCEW's goal is to reduce energy usage through energy efficiency in San Mateo County, including its twenty cities and unincorporated areas. C/CAG is a Joint Powers Authority consisting of all twenty cities and the County of San Mateo that enables direct contact to all levels of management at the city and county governments.

SMCEW delivers a comprehensive portfolio of energy efficiency services to public agencies, nonprofits, small businesses, schools, and residential customers including direct install programs for lighting and refrigeration measures, audits, benchmarking, technical assistance for more complex energy efficiency projects through PG&E's Customized Retrofit program, and energy efficiency training, education workshops, and classes.

Services provided by SMCEW include the Government Partnership Direct Install Program and MIDI.

## **Santa Barbara County Energy Watch**

Santa Barbara County Energy Watch is a partnership between PG&E, SCG, the County of Santa Barbara, and the cities of Buellton, Guadalupe, Santa Maria, and Solvang. The Santa Maria Valley Chamber of Commerce serves as the partnership implementer within PG&E's service area which covers only the Northern County area.

The partnership provides assessments and the direct installation of energy saving measures to qualifying residences, businesses, and municipal facilities throughout the Northern Santa Barbara County service area. The partnership also works to encourage the efficient use of energy by providing energy efficiency information at community events, by providing public and municipal education and training programs, and by providing audits and financial assistance to municipal customers for the energy efficient retrofit of municipal facilities.

## **Sierra Nevada Energy Watch**

Sierra Nevada Energy Watch (SNEW) is comprised of 14 rural Sierra counties, including Lassen, Butte, Sutter, Plumas, Yuba, Sierra, Nevada, Placer, El Dorado, Amador, Calaveras, Alpine, Tuolumne, and Mariposa. SNEW is dedicated to providing innovative energy efficiency solutions for local governments and businesses throughout the Sierras. SNEW coordinates the strengths of PG&E and the counties and cities within the foothill region to overcome energy-efficiency barriers and better serve the unique needs of small mountain and rural communities.

SNEW provides comprehensive, sustained technical services to municipal, nonprofit, and small business customers. SNEW maintains a presence in the community by attending local events and providing energy efficient measures to municipal, nonprofit facilities as well as small business customers.

SNEW's commercial program includes the Energy Watch Tune-up Program to help businesses save energy and money. This regional program provides a comprehensive energy assessment, delivers money saving measures, and connects businesses with other energy saving opportunities.

The Energy Watch municipal program offers assistance with energy assessments of government facilities and provides energy efficiency equipment. Many of these items are offered at no cost to qualifying customers. SNEW also offers greenhouse gas inventories and policy design to reduce community energy usage.

Services provided by SNEW include the Small Commercial Direct Install Program and the Third Party/Government Partnership (3P/GP) Direct Install Program.

### **Silicon Valley Energy Watch**

Silicon Valley Energy Watch (SVEW) provides targeted energy efficiency education, outreach, energy savings delivery, and overall energy program coordination in Santa Clara County. Implemented locally by the City of San José, SVEW works closely with PG&E, other local stakeholders, and third party providers to augment the success of regional programs through enhanced coordination and outreach, and ensure that targeted customers take advantage of the broad range of audits, rebates, benchmarking, and energy efficiency training, education workshops, and classes.

Services provided by SVEW include the Government Partnership Direct Install Program and the MIDI.

### **Sonoma County Energy Watch**

The Sonoma County Energy Watch (SCEW) offers a comprehensive portfolio of energy efficiency programs that primarily target municipalities with elements that also provide outreach to small and medium businesses, nonprofits, and residential customers. The local administrator, County of Sonoma Department of General Services, aims to lead by example and is working in partnership with other cities in the county to promote programs and initiatives in energy conservation and efficiency, clean energy generation, and environmental programs.

Services provided by SCEW include the Third Party/Government Partnership (3P/GP) Direct Install Program and MIDI.

### **Local Government Energy Action Resources Energy Watch**

The Local Government Energy Action Resources (LGEAR) is designed to optimize the opportunities for jurisdictions and their communities to work toward the common goal of achieving short- and long-term energy savings. LGEAR funds new partnerships throughout the program cycle. This included Lake County, Merced County, and Yolo County Energy

Watches. Merced County Energy Watch did not actually materialize, but some energy savings within the county were included in the LGEAR program.

### **Lake County Energy Watch**

Lake County Energy Watch (LCEW) is a partnership between PG&E and the County of Lake and is administered through the Community Development Department. LCEW offers a comprehensive portfolio of energy efficiency programs that target municipalities, special districts, non-government organizations, local businesses, and low income residential individuals. The LCEW program includes the following elements: a direct-install program for lighting measures for public agencies, non-profits and small businesses; a direct-install program for lighting and weatherization measures for low income residents; and energy efficiency training and education workshops and classes for local contractors and residents.

Services provided by LCEW include the Third Party/Government Partnership (3P/GP) Direct Install Program and the MIDI.

### **Yolo County Energy Watch**

Yolo County Energy Watch (YCEW) promotes energy efficiency and the reduction of greenhouse gas emissions in local government operations. In addition, YCEW promotes the reduction of greenhouse gas emissions throughout the community primarily through programs targeting government facilities, nonprofit organizations, small businesses, residences, farms, schools, and factories in Yolo County. The program supports existing PG&E and other programs that promote or encourage energy efficiency, renewable energy, and greenhouse gas reduction. The partnership engages and coordinates local government officials, technical staff, and experts in demonstrating leadership in pursuit of energy efficiency and fosters a sustained energy efficiency culture among government agencies and their citizenry.

YCEW encourages and facilitates development of Climate Action Plans and other documents that describe local government efforts for increasing energy efficiency, reduction of greenhouse gas emissions, and development of renewable sources of energy. Educational opportunities are provided to all sectors of the community, and YCEW has created an intern program that trains top high school students to perform energy-efficient-based internships during the school year. As a part of the residential program, YCEW provides outreach and coordination with low income programs through the MIDI program.

Services provided by YCEW include the Third Party/Government Partnership (3P/GP) and Direct Install Program.

## Merced County

For Merced County, the Energy Watch program was put on hold in 2011 after efforts to secure an implementer contract with a local government were not successful. The program served customers while good faith efforts to work with County of Merced on a contract took place. The County ultimately declined to enter into a contract with PG&E to serve as local program implementer. PG&E is working to identify other possible local governments or government associations to serve as lead local partner.

## GOVERNMENT PARTNERSHIP PILOT PROGRAMS

### INNOVATOR PILOTS

The Innovator Pilots Program provided competitive funding to local, regional and sub-regional governments leading the effort in energy efficiency and greenhouse gas reduction activities through innovative and creative approaches to deliver energy savings. Projects were selected based on the likelihood of being scalable and replicable throughout the service area.

Approved as of June 1, 2010, in accordance with Advice Letter 3081-G-B/3597-E-B, the first solicitation for Innovator Pilot project proposals resulted in seven projects being selected for the program. Contracts were signed for these seven projects in 2010-2011. Eight more projects were solicited and selected in 2011 for a total of 15 Innovator Pilot projects. Of these 15 projects, only 3 were completed by the end of 2012. The remaining 12 will be completed during the 2013-2014 cycle. See the table below for brief summaries of each of the pilots as of December 2012.

#### *Innovator Pilot Projects*

Local Government	Projects	Status
<b>Projects Selected During the 2010 Solicitation Appear Below</b>		
Alameda County Office of Education	The Alameda County Office of Education (ACOE) Leadership in Energy Efficiency Program (LEEP) seeks to develop a new, replicable model for improving energy efficiency in an especially hard-to-reach and financially constrained sector: Public school districts. By providing energy efficiency expertise and management assistance at the office of education level, the LEEP Program leverages internal resources and relationships unique to school districts in order to actualize results. The LEEP energy managers will test their hypothesis in 36 school districts.	Continue through 2013.
City of Chico	The pilot plans to help moderate-income households not eligible for low-income programs but cannot typically afford to install energy savings measures on their	Continue in

Local Government	Projects	Status
	own. The pilot will achieve measurable energy savings by bringing their homes into compliance with Chico's Residential Energy Conservation Ordinance (RECO). This pilot has two primary goals: 1) to identify the most cost-effective path of coming into RECO compliance and achieving significant energy savings in moderate-income homes, and 2) to test the impacts of access to different types of energy consumption information (e.g., in-person; telephone, online) on influencing customer behavior. The pilot not only promotes the local green economy by hiring nearby businesses to provide the audits, but also helps our customers achieve significant energy savings in their home.	2013.
Sierra Business Council	This project includes three components: 1) establishing an Energy and Climate Leadership (ECL) Institute for the purpose of developing grassroots leadership; 2) providing an Energy Efficiency Training Program (EETP); and, 3) enhancing energy use information and management for small businesses and municipalities using sMeasure. Overarching goal is to demonstrate that climate change, with its expected environmental impacts, also presents regional economic opportunities to respond to the imperative to mitigate those expected impacts by decreasing energy usage. The ECL Institute is designed to develop and support collaborative leadership across key members of Sierra communities for the purpose of driving projects which reduce greenhouse gas emissions in their communities. The EETP component provides a paid training for local contractors to increase the suite of services offered to potential customers to include energy audits, solar plumbing, energy retrofits, and other installations in areas where local capacity is lacking. The third component assesses the success of implementing no-cost energy-monitoring software (sMeasure) aimed at SMBs to determine the extent to which it drives energy efficiency savings through the identification of achievable solutions and lower overall energy costs. This tool uses data from My Energy to analyze a customer's energy usage and compare it to similar users in similar weather zones.	Continue in 2013.
QuEST/Cities of Oakland, Berkeley, and Emeryville	Owners of multi-family properties do not reap a direct financial benefit from energy improvements; and tenants have no equity interest in making investments. In the case of master metered buildings, tenants have little direct benefit to conserve. This project proposes to develop policies and programs that the utility and local governments can use to address this split incentive. Several core approaches will be pursued.	Completed in 2012.
QuEST/Cities of Oakland, Berkeley, and Emeryville	It is more cost-effective to provide commercial customers with a single, comprehensive audit than the current model where direct installation contractors audit only the specific technology that they sell, leaving customers uninformed about all of their options and creating lost opportunities. This will ease customer confusion about which energy savings investments are best for their situation, ultimately leading to increased project implementation and deeper energy savings compared to historical utility funded energy efficiency programs.	Continue in 2013.
Santa Clara County (Silicon Valley Energy Watch)	Pilot expands the ability of municipal housing departments to incorporate Whole House energy efficiency measures into standard rehabilitation work. The City of San Jose Housing Department provides a range of affordable housing programs and services to San Jose residents, including financial and technical assistance. This pilot will provide homeowners with financial assistance in the form of loans	Continue in 2013.

Local Government	Projects	Status
	and grants to make repairs and improvements to their homes. The program will serve low- and moderate-income, hard to reach residential communities. The pilot coordinates outreach education and energy savings projects across Santa Clara County in order to ensure a maximally comprehensive, innovative, and strategic approach to energy savings.	
Santa Clara County (Silicon Valley Energy Watch)	Program is funding 17 public and nonprofit agencies in Santa Clara County with “mini grants” to conduct 18 innovative energy efficiency outreach and education programs with targeted communities. The program supports small, local, and innovative social marketing campaigns designed to achieve significant and lasting behavior changes surrounding energy efficiency in limited, targeted communities. To qualify for funding, projects had to define a specific target population, situate energy efficiency within a broader framework of environmental sustainability, and include tangible incentives for behavior change towards energy efficiency. Funded projects include energy-focused business outreach, an educational television series, youth classroom education, and creation of an energy efficiency module for low income home rehabilitation volunteers.	Completed in 2012.
<b>Projects Selected During the 2011 Solicitation Appear Below</b>		
City of San Francisco	This pilot is studying opportunities for transforming the market so that newer, more efficient refrigeration equipment can provide a more cost-effective option for small and medium business (SMBs). The City will do this by collecting accurate estimates of the energy savings associated with the targeted equipment and show results of how permanent retirement and disposal of inefficient commercial refrigeration from the marketplace may help improve the efficiency of refrigeration programs for SMBs.	To be initiated in 2013.
Mendocino County	The Community Development Commission of Mendocino County is developing a program to assist Public Housing Authorities (PHAs) in facilitating market transformation within their internal operations and in hard to reach communities by embedding energy efficiency practices into its policies and procedures. This pilot program will create a new procurement and purchasing policy for PHAs that incorporates long-term energy savings into cost analyses while aligning with local, state and federal rules and regulations.	Continue in 2013.
Humboldt County	This pilot will test the Redwood Neighborhood Energy Challenge (RNEC) concept, which will engage neighborhoods and individuals to reduce energy consumption on behalf of a local school. To encourage participation and residential energy reductions, the RNEC will utilize concepts from community based social marketing. Regardless of energy saving outcomes, the RNEC will evaluate social marketing based outreach strategies, behavioral change strategies, and the assumption that awareness, knowledge and attitudes towards energy efficiency are associated with energy use.	Continue in 2013.
Santa Clara County	Correctional facilities and campuses are traditionally high consumers of energy and pose special challenges for implementing efficiency and conservation. This category of buildings is often not effectively addressed with efficiency retrofits	Continue in 2013.

Local Government	Projects	Status
	because there are no comparable benchmarks. Successful results require specialized equipment and changes in operational procedures. To address this particular niche need, Santa Clara County will develop a program to create benchmarking standards specifically for various types of correctional facilities.	
Cities of Albany, Benicia, El Cerrito, Moraga, Orinda, Piedmont & San Pablo	This Pilot is focused on increasing energy management activity in small local governments in California. The Program will be implemented by Strategic Energy Innovations (SEI) and will pilot a model partnership of small cities backed by a technical support team composed of AmeriCorps volunteers and a retired energy professional serving as an Encore Fellow. Program aims to determine if Partner Cities can effectively and efficiently identify and implement energy management systems and practices that have been challenging for small cities to set up and maintain.	Completed in 2012.
San Luis Obispo County	This pilot seeks to prove the concept that “group purchasing of energy efficiency” for small and medium businesses is cost-effective. Group purchasing is the collective participation in a regional account of products and services by a group of independent facilities; in this case, SMBs. By pooling the buying power of more than one facility, SMBs can save time and resources obtaining and implementing products that reduce their energy costs while improving facility quality.	Continue in 2013.
Napa County	To realize long-term impacts from physical improvements requires changes in behaviors of the people using those systems. The capacity to make those changes varies from organization to organization. This pilot will develop, test, and evaluate strategies to educate building maintenance staff and occupants about systems, procedures and day-to-day behaviors that will improve energy efficiency, assure comfort, reduce operating costs and reduce GHG emissions.	Continue in 2013.
Alameda County (StopWaste.org)	By enacting the transparency of energy performance for existing single family, multifamily and commercial buildings, energy asset ratings help buyers and renters take energy efficiency into account when making housing decisions. As such, transparency may also stimulate building owners to improve the energy efficiency of existing buildings, assuming higher property values if energy improvements are capitalized in building prices.	Continue in 2013.

## GREEN COMMUNITIES

The Green Communities (GC) program was designed to provide data, tools, and training to local government customers to enable them to better understand and manage their municipal and community-wide energy usage in order to develop and implement climate action plans. PG&E staff worked with many different non-government organizations and government organizations to provide the GC Program services and products. Major program activities described in Advice Letter 3082-G-A/3598-E-A, approved in March 2010, fall into the three subprograms listed below:

## **1. Statewide Assistance for Local Governments (Statewide Program)**

The IOUs entered into co-funded contracts with the International Council for Local Environmental Initiatives (ICLEI), the Institute for Local Government (ILG), and the Local Government Commission (LGC) to provide a coordinated statewide program of workshops, technical assistance, a recognition program, and other means to allow local governments to share best practices associated with energy management. This statewide program is called the Statewide Energy Efficiency Collaborative (SEEC). Work performed in this program is coordinated with the statewide local government energy efficiency best practices coordinator whose contract is also co-funded by the four IOUs.

In 2010 PG&E issued a contract with ICLEI to develop a set of tools and conduct a series of workshops and training for local governments about taking key steps to reduce GHG emissions including: conducting a local government operations inventory, conducting a community-scale inventory, developing an emissions reduction target, and developing and implementing a climate action plan. As of December 31, 2012, ICLEI had conducted 38 in-person or webinar workshops throughout the state and completed 32 tools and/or guidance documents that are available at <http://californiaseec.org/tools-guidance>. In the 2012 third quarter, ICLEI also formalized an agreement with the California Air Resources Board and the Governor's Office of Planning and Research (OPR) to place SEEC resources prominently among state resources for local governments. ICLEI, OPR and ARB also agreed to engage in a long term strategic alliance in which all SEEC tools and resources are created in alignment with California state policy. Additionally, the duplication of tool development and other resources is being addressed directly in an attempt to avoid any duplication and create the most useful set of resources for California local governments.

## **2. Climate Planning Assistance for Local Governments (Climate Program)**

This subprogram provided funding, training, and energy usage data to local governments, regardless of whether they are part of a local government partnership, to help with the completion of GHG inventories and climate action plans (CAPs). Work performed in this subprogram was coordinated closely with the local government partnerships to leverage LGP Strategic Plan Menu work with the Climate Program efforts.

As of December 31, 2012, the Climate Program had completed 144 municipal operations GHG inventories and 88 community-wide inventories. One community-wide inventory and one municipal inventory remain in progress.

In addition, several of our government partners were in the process of completing energy portions of climate action plans for municipal and/or community-wide operations. Specifically, our partners completed 10 municipal climate action plans and 33 community-wide climate action plans related to energy in the 2012 third quarter. An additional 24 community-wide climate action plans related to energy will continue to be developed into 2013. These plans are implemented through the following government partners: San Mateo County, Sonoma County, Association of Monterey Bay Area Governments, San Luis Obispo County Air Pollution Control District, Santa Clara County, Solano Transportation Authority, the City of American Canyon, the City of West Sacramento, the City of Davis, QuEST, Sierra Business Council, and Santa Barbara County.

Data: PG&E collaborated with ICLEI to develop standardized reports to provide local governments with data on the GHG emissions associated with their electricity and natural gas use at the municipal level and aggregated non-customer specific data at the community-wide scale. PG&E also collaborated with local jurisdictions to develop more detailed residential and non-residential aggregate reports with data on zip code and NAICS codes. As of December 31, 2012, PG&E had provided inventory reports to 100 percent of cities and counties and more detailed reports to 30 percent of cities and counties.

### **Fluorescent Lamp Recycling Program (FLR Program)**

In collaboration with local governments, and as part of its Green Communities program, PG&E launched the Fluorescent Lamp Recycling Outreach and Marketing (FLR) Program in six counties in 2011 for the proper disposal of fluorescent lamps for residential customers. This sub-program built on an earlier FLR pilot to develop a standard menu of marketing, education and outreach tools to be tested by a limited number of local governments to educate their residents about the necessity and options for appropriately recycling fluorescent lamps to protect public health and the environment. Additionally, the FLR Program provided resources to assist local governments with actual implementation of fluorescent lamp collection infrastructure, such as recycling kits. In 2010, the FLR Program activities focused on scoping and awarding a contract with KEMA to develop education and outreach tools based on lessons learned from PG&E's prior FLR pilot and identifying new local governments to participate in expanded activities in 2011 and 2012. Upon completion of the KEMA work, several contracts with FLR pilot participants were issued in 2011. The counties of Humboldt, Sonoma, Napa, Alameda, Santa Clara, and Santa Cruz have established retail partnerships for fluorescent lamp drop-off and collection. Through 2012, FLR outreach programs recycled a grand total of 508,731 lamps.

In addition to fluorescent lamp recycling, the Green Communities program collaborated with Alameda County StopWaste.Org to develop engaging and consistent marketing and branding materials to message the importance of proper disposal for fluorescent lamps. The program developed designs for web badges, posters, newspaper ads, shelf-talkers and counter-cards, bill inserts, school handouts, and a variety of elements that make up a toolkit for any local government interested in launching their own fluorescent lamp recycling program. These free marketing and outreach templates are available to all local governments on the PG&E website at [www.pge.com/sustainablecommunities](http://www.pge.com/sustainablecommunities) and are customizable for any city and county that wants to communicate about collection locations. Several counties are already using these materials in their outreach with the goal of establishing a recognizable and actionable message to residents disposing of fluorescent bulbs.

## PROGRAM DESCRIPTIONS AND STRATEGIES – THIRD PARTY PROGRAMS

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Third Party programs support the statewide programs and are described in more detail below.

### 1. Third Party programs supporting the Residential Program

**Implementer:** Heschong Mahone Group (HMG)

**Program:** California Multifamily New Homes Program (CMFNH)

CMFNH encourages multifamily residence builders to construct homes that exceed California's T-24 energy efficiency standards by at least 15 percent. CMFNH facilitates energy efficient design and construction in multifamily housing through design assistance and cash incentives. CMFNH benefits include energy efficiency services for developers, architects, engineers, energy consultants, and owners. CMFNH offers resources for owner/developers of qualified multifamily new construction.

**Implementer:** Proctor Engineering Group

**Program:** Cooling Optimizer Program

The Cooling Optimizer Program (previously called the Enhanced Time Delay Relay Switch Program) is a direct install mass market program serving single family and mobile home residential customers in Climate Zones 2, 4, 11, 12, 13 and 16 and multifamily residential customers in Climate Zones 11, 12 and 13. The program improves the sensible efficiency of air conditioners by running the fan at the end of the compressor cycle, evaporatively cooling the air returning to the building. The program also supports the introduction of retrofit high efficiency variable speed brushless permanent magnet (BPM) fan motors with enhanced time delay integrated into the

motor that reduces fan power consumption during heating, cooling, ventilation and fan time delay. Proctor Engineering Group recruits and trains the subcontractors who deliver this program to the customer as well as performing QA/QC activities of the installations.

**Implementer:** Systems Building Research Alliance (SBRA)

**Program:** New ENERGY STAR® Manufactured Homes

New manufactured homes are typically built under the nationally-preemptive HUD Manufactured Housing Standards, with energy requirements less stringent than the California Energy Code and well below ENERGY STAR® levels. The proposed program will move a substantial share of the new manufactured homes built in PG&E's service area from what has been basic energy construction under the HUD standards to high performance ENERGY STAR® levels by the strategic application of rebates. It will also reduce system load by right sizing of cooling equipment capacity and by reducing the building thermal load. For homes with electric heat, it will change the heating equipment practice to heat pumps from the current preference for electric resistance furnaces. It also contains an element to educate the key players in the industry—particularly the retail community, and through the retailers, homebuyers—as to the benefits of ENERGY STAR® and energy efficient construction, thereby sustaining program gains into the future. This program terminated at the end of the 2010-2012 Portfolio Cycle.

**Implementer:** Synergy Companies

**Program:** Direct Install for Manufactured and Mobile Homes

This Direct Install for Manufactured and Mobile Homes Program is designed to be a direct installation, no-cost-to-the-customer, resource program that serves the hard-to-reach (HTR) moderate-income customers in PG&E's service area and focuses 25 percent of its efforts toward regions outside of the nine-county Bay Area and the Central Valley. It also targets non-English speaking customers, including those who speak Spanish, Russian and a variety of Asian languages. The program targets manufactured/mobile home customers that would not otherwise receive program benefits from public-purpose funding. It includes evaporative cooler fan depowerment and enhanced pad measures in mobile homes with evaporative cooling. The evaporative cooling elements and diagnostic measures for central air conditioning are shown to reduce energy use during afternoon peak loads.

## 2. Third Party programs supporting the Commercial Program

**Implementer:** The Trane Company

**Program:** Cool Cash

Cool Cash is a third party performance contracting program that delivers electric savings, demand reduction and demand response opportunities by offering

comprehensive facility audits and financial incentives for the installation of energy efficiency measures at qualifying commercial facilities served by PG&E throughout its service area. Program efforts will be concentrated in the Central Valley, Climate Zones 11-13. The program design promotes the introduction of a proven energy efficiency measure technology that has traditionally had a low degree of market penetration. Although this measure, an indirect evaporative pre-cooler (IEC) which uses indirect evaporation to pre-cool incoming makeup air streams, is the only one eligible for incentive through the program, program audits and other activities will promote comprehensive energy efficiency upgrades across a broad spectrum of technologies. This program terminated at the end of the 2010-2012 Portfolio Cycle.

**Implementer:** Portland Energy Conservation, Inc. (PECI)

**Program:** AirCare Plus

The AirCare Plus program provides incentives to maintenance service contractors for rooftop HVAC units for refrigerant charge and airflow modifications, economizer retrofits, and thermostat replacements and adjustments. The program targets small- and medium-sized commercial customers with HVAC rooftop units (from 3-60 tons). Customers include high tech and restaurant businesses and others for whom HVAC loads match the specified load above. In particular, the program provides service contractor technicians with on-site energy efficiency training and ongoing technical support, including use of a hand-held software device that uses proprietary AirCare Plus software and accepts data about the HVAC units and provides instructions on how to conduct the retrofit, including proper installation in compliance with Title 24. In addition, pre- and post-retrofit technical data and implemented measures are automatically recorded by the handheld diagnostic tool. After completing the rooftop HVAC unit maintenance, technicians upload their activity information through a wireless connection to the implementer's (PECI) website to identify savings and additional tune-up opportunities. Using energy savings estimates generated by the AirCare Plus software, these technicians are able to show building owners or managers how increased energy efficiency saves them money. Incentives are paid directly to the HVAC contractor.

**Implementer:** Enovity

**Program:** Commercial and Industrial Boiler Efficiency Program (CIBEP)

CIBEP is an incentive program that implements large commercial and industrial fuel-fired boiler system energy efficiency improvements that will result in both natural gas and electrical energy savings. This program combines boiler engineering evaluations and technical implementation assistance with financial incentives that make the projects more economically attractive to PG&E customers. Primary markets for CIBEP include:

- Small and large offices;
- Colleges and universities;
- Large hospitality;
- Hospitals and large medical facilities;
- Gaming and entertainment;
- Industrial and manufacturing;
- Hi-tech and laboratories;
- Laundries; and
- Food processing.

**Implementer:** Quantum Energy Services and Technologies (QuEST)

**Program:** Comprehensive Retail Energy Management Program (CREMP)

CREMP is designed to deliver cost-effective, long-lasting energy and demand savings (electric only) by offering a full suite of engineering services, primarily lighting and HVAC, to existing large retail customers in PG&E's service area. This program provides no-cost engineering services to building owners and operators, while also providing incentives for the installation of measures that improve building operations and save energy. The CREMP approach is comprehensive and targets building optimization training, and the implementation of measures and services listed above.

This program terminated at the end of the 2010-2012 Portfolio Cycle.

**Implementer:** Portland Energy Conservation Inc. (PECI)

**Program:** Energy Smart Grocer

Energy Smart Grocer provides grocers with energy audits, rebates and information about energy-efficient technology and operations. The program promotes energy-efficient lighting, HVAC, and refrigeration systems. Specific services include no-cost energy audits, energy savings reports, contractor enrollment, technical consultation, and financial rebates and rebate application assistance.

**Implementer:** KEMA

**Program:** Enhanced Automation Initiative (EAI)

EAI promotes investments in enhanced automation and control technologies. EAI targets large commercial customers who want to improve their process controls or building automation systems and the functionality of their existing energy management systems (EMS). The program offers free on-site assessments, technical assistance, and incentives for EMS reprogramming and/or hardware improvements.

**Implementer:** Enovity

**Program:** Monitoring-Based Persistence Commissioning (MBPCx)

The MBPCx program uses a building automation system (BAS) to track the ongoing performance of HVAC systems and facilitate the reporting and correction of deviations from optimal performance. The program initially involves a traditional retro-commissioning approach where site surveys are performed, the HVAC and BAS systems are thoroughly documented, and energy efficiency measures are identified through functional testing. The program then uses a Performance and Continuous Recommissioning Analysis Tool (PACRAT) as the main persistence commissioning tool. PACRAT is a comprehensive automated diagnostic tool for HVAC systems performance that automatically collects trend data from the BAS and has built-in diagnostic tools to identify system anomalies from historical data, generating reports of system anomalies and associated energy and operational cost savings at regular user-defined intervals. Customers receive incentives for participating in the program.

This program targets large commercial buildings (office, retail, hotel, hospital, college/university, high tech office/lab/manufacturing).

**Implementer:** Ecology Action

**Program:** Lodging Savers

Lodging Savers delivers multi-measure comprehensive retrofits and retro-commissioning (RCx) to small, medium and large lodging facilities in PG&E's service area. Predominate measures include lighting, HVAC controllers, refrigeration measures, and water saving measures. Ecology Action provides audits and financial incentives to encourage measure adoption.

**Implementer:** Quantum Energy Services and Technologies (QuEST)

**Program:** Medical Building Tune-Up (MBTU)

MBTU is a retro-commissioning program designed to improve the energy efficiency of hospitals operated by Kaiser Permanente, Sutter Health and Catholic Healthcare West in PG&E's service area. Hospital owners are facing the prospect of significant expenditures to meet new seismic requirements. The MBTU program takes advantage of this planned funding by providing a program design that couples in-depth energy engineering analysis, with assistance in meeting regulatory requirements of the Office of Statewide Health Planning and Development (OSHPD). The Program will provide engineering and rebates targeting feasible retro-commissioning measures as well as referrals to PG&E's Demand Response and Self-Generation programs. This program terminated at the end of the 2010-2012 Portfolio Cycle.

**Implementer:** Resource Solutions Group (RSG)

**Program:** School Energy Efficiency Program (SEE)

SEE provides school facility benchmarking, audits, technical assistance (including developing and evaluating a request for proposal to hire a contractor to install

recommended measures) and incentives to qualifying preschool (pre-kindergarten) through 12<sup>th</sup> grade schools, both public and private. In addition, this program targets qualifying college campus housing customers with specific and applicable measures in campus housing facilities. Customers can choose to receive incentives, technical assistance in lieu of incentives, or a combination of both. The program serves customers throughout PG&E's service area.

**Implementer:** Richard Heath and Associates (RHA)

**Program:** Energy Fitness Program (EFP)

EFP serves small- and medium-sized nonresidential customers in the area north of Sacramento with a no-cost/low-cost, direct-install program. The EFP performs an audit of each facility and provides direct installation of a tailored package of energy efficiency measures such as lighting, exit signs, vending machine controllers, and occupancy sensors. Energy efficiency measures may also include installation of window film and HVAC condenser coil cleaning. Applicable recommendations for lighting, refrigeration, HVAC, motors, building envelope, and food service are given to each participant in a customized energy audit report. In addition, the EFP provides energy education and personalized technical assistance to each customer as well as referrals to other applicable programs.

**Implementer:** The Energy Alliance Association (TEAA)

**Program:** Government Partnership Program

The Energy Alliance Association (TEAA) provides incentives and comprehensive energy efficiency services to small and medium businesses (up to 200kW). The focus of the program is to reduce peak demand and energy usage through short payback energy efficiency measures.

TEAA serves commercial customers in the counties of Sonoma, Mendocino, Napa, and Solano and offers no-cost energy surveys as well as 100 percent pre- and post-installation inspections. Incentives are available for eligible measures (i.e., lighting, occupancy sensors, and refrigeration).

**Implementer:** Ecology Action

**Program:** RightLights

The RightLights program is a multilingual, direct install program implemented by Ecology Action that delivers comprehensive lighting retrofits to businesses in Monterey, San Benito, Santa Clara, Santa Cruz, and San Mateo Counties with A-1, A-6, or A-10 rate schedules. RightLights' measure list includes lighting, pre-rinse spray valves, refrigeration tune-ups, refrigeration fan motor drop-in replacements, refrigeration heater door controls, strip curtains, interactive refrigeration controls, and vending machine controls.

**Implementer:** KEMA

**Program:** Small Commercial Comprehensive Refrigeration - Cool Biz

Cool Biz is an incentive program designed to provide comprehensive refrigeration energy efficiency upgrades to small- and medium-sized commercial businesses in selected areas. This targeted market encompasses convenience stores, butcher shops/meat markets, fish markets, small independent restaurants/cafes, drugstores, liquor stores, retail bakeries, caterers, cafeterias, assisted living facilities, gas station/convenience stores, and independent grocery stores. The program offers:

- A free facility assessment to identify energy saving equipment opportunities;
- A detailed proposal that includes a list of recommendations and estimates of energy savings, project cost, payback period and the rebate amount to be paid by Cool Biz;
- Installation of the approved energy-saving equipment by a local, approved contractor and well as pre- and post-installation inspections to assure quality and verify energy savings; and
- Prescriptive measures including refrigerator controls, cooler door heater controls, freezer door heater controls, electronically-commutated (EC) motors, novelty cooler controllers, custom refrigeration measures, compact fluorescents, fluorescent fixture upgrades, LED exit signs, custom lighting upgrades, HVAC system tune-ups, HVAC controls, and custom electric measures.

**Implementer:** QuEST

**Program:** Data Center Cooling Controls Program (DCCCP)

DCCCP targets data centers and server farms to improve the centers' energy efficiency by providing facility audits and incentives for temperature-control systems for computer room air conditioning units (CRAC) or computer room air handling units (CRAH) and the variable frequency drives (VFD) for those units. The program focuses on the installation of advanced controls, VFDs and outside air economizers. A self-optimizing control strategy continually adjusts the speed of the CRAC/CRAH fans so that total power consumption (fan power plus cooling power) is minimized. The approach results in significant energy savings and provides data center operators with valuable information about temperature distribution in their data centers. This program terminated at the end of the 2010-2012 Portfolio Cycle.

**Implementer:** EFM Solutions, LLC

**Program:** Energy-Efficient Parking Garage (EEPG)

The Energy Efficient Parking Garage Program is designed to fill a niche within the PG&E program portfolio with simple, proven technologies, quick installation, and a non-abrasive application/participation process, that will provide fast and plentiful energy savings. EEPG seeks out any above-ground parking garage within the PG&E area and will offer an incentive of \$0.05/kWh (equal to that of the PG&E Customized Program)

for either T8 Fluorescent or Induction lamp retrofits along with daylight controls for the perimeter fixtures.

**Implementer:** Matrix Energy Services, Inc.

**Program:** Furniture Store Energy Efficiency

The objective for the Retail Furniture Store Energy Efficiency Program is to improve energy efficiency for retail furniture stores throughout PG&E's service area. The program will replace the existing lamps with high-efficiency lamps and will perform low-cost/no-cost maintenance tune-ups, such as economizer repair, refrigerant charging, filter replacement and coil cleaning. Additionally, Matrix will work with store management to assist them in promoting CFL and other efficient lighting products to their customers.

**Implementer:** Sylvania Lighting Services

**Program:** High Performance Office Lighting

The program delivers lighting solutions to office buildings, warehouses and other large commercial buildings throughout PG&E's service area. The program proposes to use a comprehensive integrated approach and the newest lighting technologies. This program terminated at the end of the 2010-2012 Portfolio Cycle.

**Implementer:** Energy Solutions

**Program:** LED Accelerator

Energy Solutions' LED Accelerator (LEDA) program bridges the gaps between manufacturers of new LED lighting technology and major customers that can install LED technology in large numbers. Current LED products with broad potential application include:

- LED spotlights to replace low voltage halogen spotlights;
- LED reflector lamps to replace incandescent/halogen PAR lamps; and
- LED freezer case lights to replace fluorescent fixtures.

**Implementer:** EnerNOC, Inc.

**Program:** Monitoring-Based Commissioning

The program helps commercial customers gain better information about the energy usage at their facilities, participate in a comprehensive audit, implement cost-effective measures with help from incentive funds, and engage in an ongoing, monitoring-based commissioning process. The Monitoring-Based Commissioning (MBCx) program seeks to bridge the gap between demand response (DR) and energy efficiency. MBCx refers to the combination of retro-commissioning and continuous commissioning activities, coupled with ongoing, technology-based monitoring to ensure persistence of

savings. Selected facilities are analyzed to identify and implement cost-effective retro-commissioning activities that typically require little or no capital investment.

**Implementer:** Honeywell International, Inc.

**Program:** GreenVent for Energy-Efficient Kitchens

This Honeywell program GreenVent for Energy Efficient Kitchens Program will accelerate the purchase and installation of demand ventilation controls for commercial food service kitchen hoods. This program terminated at the end of the 2010-2012 Portfolio Cycle at the request of the Implementer.

**Implementer:** Ecology Action

**Program:** CasinoGreen

This program, in partnership with Nexant and California Nations Indian Gaming Association (CNIGA), will deliver comprehensive, hybrid direct install efficiency upgrades to tribal casino customers of PG&E. End uses addressed include lighting, HVAC, refrigeration, food service, motors, controls and others.

**Implementer:** Willdan Energy Solutions DBA Intergy Corporation

**Program:** Healthcare Energy Efficiency Program (HEEP)

Intergy Corporation, in partnership with Putnam Price Group, Mazzetti and Associates, California Hospital Association (CHA), and California Society of Healthcare Engineering (CSHE), created HEEP to address the complex issues of this industry's hesitancy to adopt energy efficiency behaviors, initiate facility upgrades, and achieve cost-effective energy savings. The program targets independent medical facilities, including medical office buildings, acute care facilities, skilled nursing facilities and other associated ancillary building types on medical campuses. HEEP primarily targets projects that are exempt from OSHPD requirements.

**Implementer:** Willdan Energy Solutions DBA Intergy Corporation

**Program:** Ozone Laundry Energy Efficiency

The Ozone Laundry Energy Efficiency Program (OLEEP) is a hardware program that will capture natural gas energy savings for laundry equipment used in hospitality, nursing/rehab home, industrial and other commercial segments within PG&E's service area. A vendor-neutral program, OLEEP will promote ozone laundry systems from a number of different vendors. Nursing/rehab homes and hotels are expected to have the majority of on-site laundry systems and will be the primary target areas. The heavily regulated hospital environment, particularly in regards to laundry water temperatures, has prevented the implementation of ozone technology. Intergy and the various ozone vendors will continue to work diligently with the healthcare regulating agencies to allow exceptions for ozone when safe and appropriate, but the hospital sector does not appear to have the potential that it was originally thought to have.

**Implementer:** The Trane Company  
**Program:** Cool Schools

The Cool Schools Program provides incentives for the installation of reliable and comprehensive energy-efficient technologies that achieve both energy savings and permanent peak demand reduction. The Program provides energy-efficient equipment retrofits to improve lighting quality, thermal comfort, acoustics, ventilation, indoor air quality, and occupant control to improve schools. Due to a lack of participation, Trane will close the program in 2012. This program terminated at the end of the 2010-2012 Portfolio Cycle.

**Implementer:** Low Income Investment Fund (LIIF)  
**Program:** California Preschool Energy Efficiency Program (CPEEP)

CPEEP provides energy efficiency retrofits to the largest preschool centers. The program brings together the key stakeholders in this segment to leverage additional energy efficiency funds and outreach expertise. CPEEP is a partnership with the California Department of Education and California Head Start Association.

LIIF provides a complete energy efficiency program for the centers by identifying energy and demand reduction opportunities, providing technical assistance to identify and implement projects, completing post-installation quality control procedures, and training key facility staff. The program provides direct installation of a comprehensive list of measures including lighting, HVAC refrigeration and other measures.

**Implementer:** Matrix Energy Services  
**Program:** K-12 Private Schools and Colleges Audit Retro

Matrix ESI provides comprehensive energy efficiency services to private preschools and K-12 schools, private colleges and universities and trade/technical schools market segments. The primary objective of the program is to help these facilities realize both short-term and long-term energy savings in a cost effective manner.

**Implementer:** Matrix Energy Services  
**Program:** EE Entertainment Centers

Matrix ESI provides comprehensive energy efficiency services to entertainment centers (movie theaters). The primary objective of the program is to help these facilities realize both short-term and long-term energy savings in a cost effective manner. This program terminated at the end of the 2010-2012 Portfolio Cycle.

### **3. Third Party programs supporting the Industrial Program**

**Implementer:** Air Power USA

**Program:** Assessment, Implementation and Monitoring (AIM) of compressed air systems

AIM helps PG&E industrial customers improve their compressed air systems and reduce their electric usage. In addition, AIM provides technical services at no cost to customers, including:

- Air system audits, which identify the costs and savings of specific projects to reduce electric use and improve air quality;
- Design and project implementation support, which helps customers spec and bid improvement projects and oversee their implementation;
- Savings verification, which verifies the actual savings associated with the implemented projects by measuring electric use before and after project installation;
- Incentive processing, which handles the paperwork and documentation for collecting AIM incentives; and
- Post-project technical support for three years, which helps customers sustain energy savings and air system efficiency by providing check-up audits and ongoing technical support for a period of three years after project installation.

This program terminated at the end of the 2010-2012 Portfolio Cycle.

**Implementer:** QuEST

**Program:** California Wastewater Process Optimization Program (CalPOP)

CalPOP targets wastewater treatment plants and provides facility audits, engineering assistance, project management support, and incentives based on potential energy savings. Anaerobic digester optimization takes advantage of available gas savings at wastewater treatment facilities.

**Implementer:** Global Energy Partners (now EnerNOC)

**Program:** Energy Efficiency Services for Oil Production

The Energy Efficiency Services for Oil Production Program provides a turnkey custom measure incentive program targeting PG&E hard-to-reach oil and gas customers located in PG&E's service area. It implements a variety of energy efficiency measures including: conversion of outdated pumping systems, pump-off controllers, motor controllers, proper sizing of motors, pumps, and premium efficient motors, variable frequency drives, water reduction technologies, and splitting water injection systems into high and low pressure. Global Energy Partners provide on-site surveys to identify energy efficiency opportunities and post-installation surveys to determine impacts and certify installations.

The program assists all producers by identifying qualifying projects, calculating energy savings, completing applications, verifying energy savings and submitting all necessary documentation to the utility.

**Implementer:** Lockheed Martin Services

**Program:** Heavy Industry Energy Efficiency Program (HIEEP)

HIEEP identifies and facilitates the implementation of major process-oriented and other energy efficiency upgrades for PG&E's heavy industry customers. Customers that install energy efficient systems and equipment receive incentives based on the annual kWh or therm savings achieved.

Services provided by the program include, but are not limited to:

- Identifying all opportunities (energy efficiency, demand response, and renewable energy systems) and assessing their economies;
- Performing studies and assessments to: (1) identify efficiency improvements; (2) quantify these savings and other benefits to be produced by these improvements; and (3) explain/quantify the investments needed to achieve the benefits;
- Marketing collateral design and production;
- Assisting the participant to apply for program incentives;
- Assisting the participant in vendor and contractor selection;
- Monitoring installation for quality, conformance, and participation in commissioning; and
- Processing and tracking of incentive applications.

**Implementer:** Ecova, Inc.

**Program:** Ecova Air

Ecova (formerly Ecos) Air conducts audits and installations of compressed air systems. Participating customers receive complete compressed air system audits and incentives to install equipment that result in energy savings and demand reduction. Ecova Air also provides training designed to generate persistent energy savings while helping the customer keep its compressed air system running at optimal performance. The Ecova Air Program is open to PG&E mid- to large-sized industrial facilities that use compressed air systems.

**Implementer:** Nexant, Inc.

**Program:** Refinery Energy Efficiency Program (REEP)

REEP offers Nexant's refining expertise from its Petroleum and Chemical division and demand-side management program implementation experience from its Energy

Management division. REEP also fully uses the current three-year funding cycle to specifically address the long lead-time for refinery projects. REEP provides the following services:

- Identifying cost-effective projects and providing and applying industry-specific experience for selection and design of energy efficiency projects;
- Using incentives to offset capital investments; and
- Project management/coordination.

**Implementer:** Onsite Energy Corporation

**Program:** Cement Production and Distribution Energy Efficiency

The objective of the Cement Production and Distribution Energy Efficiency (CDP) Program is to provide energy efficiency and demand reduction energy efficiency services to cement production, cement distribution and Ready-Mix plants throughout PG&E's service area. Onsite implements a variety of measures including: chemical and process improvements, mechanical process improvements, VFD's on fans, other mechanical measures, compressed air system improvements, Monitoring and Targeting/continuous improvement programs, lighting, HVAC, renewable fuels replacement and waste heat recovery. This market segment has shown a deep decline and this is reflected in a lack of participation by eligible customers. This program terminated at the end of the 2010-2012 Portfolio Cycle.

**Implementer:** Nexant

**Program:** Industrial Retrocommissioning

The program targets all industrial end uses in PG&E's service area. It is designed to tap into the large savings potential associated with optimizing and maintaining the performance of energy systems. The objective of this program is to reduce the substantial energy losses that routinely occur in industrial facilities due to poorly controlled or malfunctioning equipment

#### **4. Third Party programs supporting the Agricultural Program**

**Implementer:** EnSave Inc.

**Program:** Dairy Energy Efficiency Program (DEEP)

DEEP offers rebates to smaller dairy producers and dairy food processors throughout PG&E's service area. Measures include milking vacuum pump variable speed drives, plate coolers, compressor heat recovery units, milk transfer pump variable speed drives, scroll compressors, premium efficiency motors, box fans, high-volume, low-speed fans, and lighting. EnSave works with the manufacturers of the technologies, dairy equipment dealers, and agricultural organizations to promote the program and enroll customers.

**Implementer:** VaCom Technologies

**Program:** Industrial Refrigeration Performance Plus Program (IRPP)

IRPP targets refrigerated warehouses, food processors and related cooling operations that operate year-round or seasonally in the food and beverage sector, including processing, storage and distribution operations with industrial refrigeration systems. Under IRPP, existing facilities are retrofitted, emphasizing refrigeration system improvements as well as lighting, envelope, pumping, air handling and related process equipment. Whole-facility simulation is used to quantify savings and economics. Two years of web-based automated performance monitoring and associated operator education is included to provide transparency and long-term permanence of savings. IRPP provides more complex, comprehensive integrated solutions, higher savings levels and institutes a continuous improvement paradigm delivered through real-time performance monitoring and training.

**Implementer:** Richard Heath and Associates (RHA)

**Program:** Mercury Vapor Yard Light Exchange Program (LCP)

RHA replaces mercury vapor fixtures in the agricultural communities in the rural areas of Climate Zone 11 through a direct install or exchange process. RHA coordinates and facilitates the LCP with local schools and community organizations. The program encourages the voluntary, no-cost trade of existing, older mercury vapor lights for high pressure sodium lighting. By making the LCP a community event, RHA expands community fundraising events into activities that combine marketing, outreach, public energy awareness, and financial benefit to local organizations and schools in rural communities.

**Implementer:** Resource Solutions Group (RSG)

**Program:** Wine Industry Efficiency Solutions (WIES)

WIES addresses energy efficiency and resource management in smaller wineries and implements a process that ensures demand and energy savings. WIES identifies efficiency improvement opportunities and provides incentives through either installation support services or rebates for customers who agree to implement the recommendations. RSG developed the Resource Management Advisor model for businesses that require more than rebates to encourage program participation. This model assists customers in implementing efficiency projects such as equipment specification, bid package development, contractor selection, project financing and project management.

**Implementer:** Global Energy Partners (now EnerNOC)

**Program:** Comprehensive Food Process Audit & Resource Efficiency Program

This program delivers electric and natural gas savings and demand reduction for the food processing industry throughout PG&E's service area. Measures include energy-

efficient natural gas equipment, such as condensing economizers, condensate return optimization, heat recovery, process boilers, steam traps, and pipe and tank insulation; and electric equipment, such as custom refrigeration, processing and pumping, condensers and controls for refrigeration systems, premium efficiency motors and variable speed drives, and lighting. The measures address every major gas and electric end use in food processing facilities.

**Implementer:** Resource Solutions Group (RSG)

**Program:** Dairy Industry Resource Advantage Program (DIRA)

The Program provides energy efficiency services and incentives to larger dairies that will:

1. Identify comprehensive efficiency solutions through dairy facility energy audits, covering facilities as well as pumping and irrigation systems
2. Provide detailed and prioritized recommendations for efficiency upgrades
3. Offer three types of incentives to dairy customers in PG&E area to encourage comprehensive and swift installation of measures: base incentives, Installation Support Services, and bonus rebates
4. Coordinate with complementary programs in PG&E's range of offerings, including:
  - Third-party programs, such as those in process wastewater, refrigerated warehouses, and food processing
  - Demand Response
  - Water efficiency and energy/water synergies
  - Agricultural Pump Efficiency Program
  - Renewable energy

**Implementer:** BASE Energy, Inc.

**Program:** Process Wastewater Treatment EM Program for Ag Food Processing

The objective of the program is to assist the existing and new/expanding food processing facilities to reduce their energy and demand on their wastewater treatment facilities in PG&E's service area.

- |                                |                               |
|--------------------------------|-------------------------------|
| • Dairies                      | • Ice cream production plants |
| • Fruit beverage manufacturers | • Tomato plants               |
| • Dry fruit producers          | • Yeast production plants     |
| • Poultry farms                | • Wineries                    |

## **5. Third Party programs supporting the Workforce, Education & Training program**

**Implementer:** ConSol

**Program:** Builder Energy Code Training (BECT)

BECT provides training by the building industry to the building industry to improve compliance with Title 24 energy codes for residential new construction.

BECT provides the fundamentals of energy-efficient construction and an understanding of materials, assemblies, building systems and subsystems in the context of energy codes. In addition, in response to the major changes in Title 24 requirements, the focus of BECT has been to improve compliance with the new mandatory lighting standards and to provide information and training to encourage use of energy efficiency measures that reduce peak consumption and load, especially the quality construction code elements that require third-party inspections and tests. These inspections and tests are not widely used by builders but provide cost-effective and verified savings.

**Implementer:** Build It Green

**Program:** Green Building Technical Support Services (GBTSS)

GBTSS promotes a green building strategy to achieve greater energy efficiency in new and existing homes. The focus of the program is to promote healthy, durable, energy and resource-efficient buildings in California. In order to accomplish this objective, Build It Green uses education and outreach to connect consumers and building professionals with the tools and technical expertise they need to build quality green buildings. Build It Green strives to foster collaboration with key stakeholder groups to accelerate the adoption of green building standards, policies, and programs.

# SECTION 1

## ENERGY SAVINGS

Table 1

<b>Table 1:</b> <i>Electricity and Natural Gas Savings and Demand Reduction</i>						
<b>Annual Results</b>		<b>Installed Savings</b>	<b>CPUC Adopted in D. 09-09-047 Goal (Year)</b>	<b>% of Goals (Year)</b>	<b>% of 3-year Goals (Portfolio)</b>	<b>Balance (4)</b>
<b>2010 Energy Savings (GWh) – Annual</b>	PG&E	1,837	964	191%	59%	1,273
<b>2011 Energy Savings (GWh) – Annual</b>	PG&E	1,788	1,032	173%	58%	(515)
<b>2012 Energy Savings (GWh) – Annual</b>	PG&E	1,829	1,114	164%	59%	(2,344)
<b>TOTAL Energy Savings (GWh) – Annual</b>		<b>5,454</b>	<b>3,110</b>	<b>175%</b>	<b>175%</b>	<b>(2,344)</b>
<b>2010 Energy Savings (GWh) – Lifecycle</b>	PG&E	17,695				
<b>2011 Energy Savings (GWh) – Lifecycle</b>	PG&E	17,802				
<b>2012 Energy Savings (GWh) – Lifecycle</b>	PG&E	17,737				
<b>TOTAL Energy Savings (GWh) – Lifecycle</b>		<b>53,235</b>				
<b>2010 Natural Gas Savings (MMth) – Annual</b>	PG&E	15	15.6	96%	31%	34
<b>2011 Natural Gas Savings (MMth) – Annual</b>	PG&E	27	16.2	168%	56%	7
<b>2012 Natural Gas Savings (MMth) – Annual</b>	PG&E	20	17.1	116%	41%	(13)
<b>TOTAL Natural Gas Savings (MMth) – Annual</b>		<b>62</b>	<b>49</b>	<b>127%</b>	<b>127%</b>	<b>(13)</b>
<b>2010 Natural Gas Savings (MMth) – Lifecycle</b>	PG&E	317				
<b>2011 Natural Gas Savings (MMth) – Lifecycle</b>	PG&E	459				
<b>2012 Natural Gas Savings (MMth) – Lifecycle</b>	PG&E	341				
<b>TOTAL Natural Gas Savings (MMth) – Lifecycle</b>		<b>1,117</b>				
<b>2010 Peak Demand savings (MW)</b>	PG&E	322	218	148%	46%	381
<b>2011 Peak Demand savings (MW)</b>	PG&E	313	234	134%	45%	68
<b>2012 Peak Demand savings (MW)</b>	PG&E	314	251	125%	45%	(245)
<b>TOTAL Peak Demand savings (MW)</b>		<b>948</b>	<b>703</b>	<b>135%</b>	<b>135%</b>	<b>(245)</b>

PG&amp;E Notes:

- (1) All energy savings numbers are gross.
- (2) Does not include Energy Savings Assistance (ESA) Program savings (formerly titled Low Income Energy Efficiency (LIEE)).
- (3) Total portfolio energy savings include ex ante updates consistent with Decision 11-07-030 and the energy savings from 2006-09 CFLs installed in 2010-12 per Energy Division Memorandum on CFL Guidance for 2012 Annual Report. In addition, 10-12 Phase II workpaper dispositions received from Energy Division dated April 2, 2013 have been included in reported energy savings.
  - (a) PG&E has not included savings from HVAC QM as approved numbers were not available at the time this report was created. PG&E and Energy Division are continuing collaborative engineering analysis on HVAC QM energy savings.
  - (b) Per a memo received from Energy Division dated March 1, 2013, PG&E has updated the Energy Upgrade California (EUC) program gross realization rate (GRR) to 0.6 using an average of the rates provided as PG&E does not currently track the type of home (heated-only or heated and cooled home) and thus cannot apply the specific factors.
- (4) The "Balance" values reflect the difference between the installed savings and the 3-yr goals. The negative values are a result of installed savings exceeding the 3-yr goals.

## SECTION 2

### EMISSION REDUCTIONS

Table 2

<b>Table 2:</b> <i>Emission Reductions</i>								
Annual Results	Annual tons of CO2 avoided	Lifecycle tons of CO2 avoided	Annual tons of NOx avoided	Lifecycle tons of NOx avoided	Annual tons of SOx avoided	Lifecycle tons of SOx avoided	Annual tons of PM10 avoided	Lifecycle tons of PM10 avoided
<b>2010 Total</b>	<b>990,001</b>	<b>10,414,594</b>	<b>190</b>	<b>2,584</b>	-	-	<b>58</b>	<b>553</b>
PG&E	990,001	10,414,594	190	2,584	-	-	58	553
<b>2011 Total</b>	<b>1,040,603</b>	<b>11,354,618</b>	<b>237</b>	<b>3,142</b>	-	-	<b>57</b>	<b>561</b>
PGE	1,040,603	11,354,618	237	3,142	-	-	57	561
<b>2012 Total</b>	<b>1,029,820</b>	<b>10,736,581</b>	<b>200</b>	<b>2,616</b>	-	-	<b>59</b>	<b>565</b>
PGE	1,029,820	10,736,581	200	2,616	-	-	59	565
<b>Total for 3-year Portfolio</b>	<b>3,060,425</b>	<b>32,505,794</b>	<b>627</b>	<b>8,342</b>	-	-	<b>174</b>	<b>1,679</b>

PG&E Notes:

- (1) All environmental impact values are derived from gross energy savings.
- (2) Does not include ESA Program savings.
- (3) For savings assumptions, please refer to footnotes provided in Table 1.

Table 2 reports incremental environmental impacts of PG&E's Energy Efficiency portfolio for 2012. The E3 calculator (version PG&E10-12 Dual v1g) has been updated by the Energy Division consultant for the calculation of carbon dioxide (CO<sub>2</sub>), nitrogen oxide (NO<sub>x</sub>) and particulate matter under 10 microns (PM10) per D.10-04-029, O.P. 5. The E3 calculator includes a Greenhouse Gas adder of \$30 per tonne in 2012 using generation avoided cost inputs from the most recent Commission adopted Market Price Referent, and natural gas avoided costs for energy efficiency resources using natural gas price data as of D.10-04-029.

All of PG&E's resource programs that provide energy savings contribute to the emissions reductions reported in the table above. The emissions reductions are directly related to the amount of kWh and therms saved, so the programs and strategies that were most successful in reducing emissions are the same ones that were most successful in reducing electric (kWh) and gas (therms) usage.

PG&E uses the E3 calculator for all emissions calculations except for Sulfur Oxide (SO<sub>x</sub>). The SO<sub>x</sub> reductions are not calculated in the E3 calculator, but these reductions are expected to be zero since none of the California IOUs use coal fueled power.

## SECTION 3

### EXPENDITURES

Table 3

<b>Table 3:</b> <i>Expenditures</i>				
<b>Summary of Portfolio Expenditures</b>	<b>Adopted Program Budget</b>	<b>Annual Expenditures</b>	<b>Percent of Portfolio Budget</b>	<b>Percent of Total Annual Expenditures</b>
<b>Total Portfolio Expenditures</b>				
Administrative Costs	144,242,356	44,951,669	3.5%	10.7%
Marketing/ Advertising/ Outreach Costs	105,551,639	30,214,801	2.4%	7.2%
Rebates/Incentives/Direct Install	541,353,550	174,299,571	13.6%	41.6%
Direct Implementation Costs	493,332,455	169,240,210	13.2%	40.4%
<b>Total Portfolio Expenditures</b>	<b>1,284,480,000</b>	<b>418,706,251</b>	<b>32.6%</b>	<b>100.0%</b>
<i>Total Investor-owned Utility (Core) Expenditures (sub-component of portfolio)</i>				
Administrative Costs	87,177,575	24,793,530	1.9%	5.9%
Marketing/ Advertising/ Outreach Costs	80,831,327	25,110,141	2.0%	6.0%
Rebates/Incentives/Direct Install	332,030,266	96,524,360	7.5%	23.1%
Direct Implementation Costs	322,234,089	109,691,704	8.5%	26.2%
<b>Total Investor-owned Utility (Core) Expenditure:</b>	<b>822,273,257</b>	<b>256,119,734</b>	<b>19.9%</b>	<b>61.2%</b>
<i>Total Competitive Bid Program Expenditures (sub-component of portfolio)</i>				
Administrative Costs	35,538,004	12,641,164	1.0%	3.0%
Marketing/ Advertising/ Outreach Costs	15,299,866	3,042,743	0.2%	0.7%
Rebates/Incentives/Direct Install	140,993,501	44,584,733	3.5%	10.6%
Direct Implementation Costs	98,147,821	38,310,684	3.0%	9.1%
<b>Total Competitive Bid Program Expenditures</b>	<b>289,979,192</b>	<b>98,579,324</b>	<b>7.7%</b>	<b>23.5%</b>
<i>Total Partnership Program Expenditures (sub-component of portfolio)</i>				
Administrative Costs	21,526,777	7,516,975	0.6%	1.8%
Marketing/ Advertising/ Outreach Costs	9,420,446	2,061,917	0.2%	0.5%
Rebates/Incentives/Direct Install	68,329,783	33,190,478	2.6%	7.9%
Direct Implementation Costs	72,950,545	21,237,823	1.7%	5.1%
<b>Total Partnership Program Expenditures</b>	<b>172,227,551</b>	<b>64,007,193</b>	<b>5.0%</b>	<b>15.3%</b>
<b>Total EM&amp;V Expenditures (separate from portfolio)</b>				
EMV IOU	14,718,000	5,392,900	10.1%	25.5%
EMV JOINT STAFF	38,802,000	15,770,164	29.5%	74.5%
<b>Total EM&amp;V Expenditures</b>	<b>53,520,000</b>	<b>21,163,063</b>	<b>39.5%</b>	<b>100.0%</b>

PG&amp;E Notes:

- (1) This table includes PG&E's annual expenditures for 2012, the third year of the 2010-2012 Energy Efficiency Portfolio cycle.  
 (2) These costs are for a 16-month period from January 2012 through April 2013.

Table 3 reports PG&E's annual expenditures for 2012, the third year of the 2010-2012 Energy Efficiency Portfolio cycle.

## SECTION 4

### COST-EFFECTIVENESS

Table 4

<b>Table 4:</b>										
<i>Cost Effectiveness</i>										
<b>Annual Results</b>	<b>Total Cost to Billpayers (TRC) [1]</b>	<b>Total Savings to Billpayers (TRC)</b>	<b>Net Benefits to Billpayers (TRC) [1]</b>	<b>TRC Ratio</b>	<b>Total Cost to Billpayers (PAC) [1]</b>	<b>PAC Ratio</b>	<b>PAC Cost per kW Saved (\$/kW) [2]</b>	<b>PAC Cost per kWh Saved (\$/kWh) [3]</b>	<b>PAC Cost per therm Saved (\$/therm) [3]</b>	
PG&E	\$ 609,015,182	\$ 905,450,107	\$ 296,434,925	1.49	\$ 382,852,197	2.37		\$ 0.05	\$	0.63
<b>2010 TOTAL</b>	<b>\$ 609,015,182</b>	<b>\$ 905,450,107</b>	<b>\$ 296,434,925</b>	<b>1.49</b>	<b>\$ 382,852,197</b>	<b>2.37</b>	<b>\$ -</b>	<b>\$ 0.05</b>	<b>\$</b>	<b>0.63</b>
PG&E	\$ 599,133,998	\$ 898,395,844	\$ 299,261,846	1.50	\$ 364,530,616	2.46		\$ 0.05	\$	0.55
<b>2011 TOTAL</b>	<b>\$ 599,133,998</b>	<b>\$ 898,395,844</b>	<b>\$ 299,261,846</b>	<b>1.50</b>	<b>\$ 364,530,616</b>	<b>2.46</b>	<b>\$ -</b>	<b>\$ 0.05</b>	<b>\$</b>	<b>0.55</b>
PG&E	\$ 583,786,903	\$ 792,431,479	\$ 208,644,575	1.36	\$ 384,745,662	2.06		\$ 0.06	\$	0.80
<b>2012 TOTAL</b>	<b>\$ 583,786,903</b>	<b>\$ 792,431,479</b>	<b>\$ 208,644,575</b>	<b>1.36</b>	<b>\$ 384,745,662</b>	<b>2.06</b>	<b>\$ -</b>	<b>\$ 0.06</b>	<b>\$</b>	<b>0.80</b>

PG&amp;E Notes:

- (1) The cost-effectiveness calculations for 2010-12 are based on the actual accomplishments recorded in the respective years.  
Includes shareholder incentive payments of \$29.1M in 2010 (D. 10-12-049), \$26.2M in 2011 (D. 11-12-036), and \$21M in 2012 (D.12-12-032) and Codes and Standards costs and benefits; excludes ESA Program costs and benefits, Statewide Emerging Technology costs per D.12-11-015, and \$8.2M in Financing Program costs per D.09-09-047.
- (2) The adopted avoided cost methodology does not provide information to determine a meaningful value for PAC Cost per kW. The adopted avoided cost methodology created kWh cost values that vary for each hour of the year that includes kW generation capacity costs. The current PAC Cost per kWh includes ratepayer financial costs incurred in producing electric savings.  
The same costs would have to be reallocated if a PAC Cost per kW were presented. Additionally, the current approved E3 calculator does not have the capability to calculate discounted kW.
- (3) PAC cost per kWh or per therm is levelized PAC cost per kWh or therm, respectively. The current E3 calculator does not calculate levelized cost for the claims with incentive values that do not have energy savings or measure costs. Even though there are no electric or gas energy savings, the TRC and/or PAC cost is calculated only for Gas for such claims.
- (4) PG&E used reported project costs and incremental cost factors to calculate the cost effectiveness for non-residential retrofit customized projects.
- (5) For savings assumptions, please refer to footnotes provided in Table 1.

Table 4 shows the various cost-effectiveness values used in the Total Resource Cost (TRC) test and the Program Administrator Cost (PAC) test. The cost-effectiveness calculations have been performed using the E3 calculator (version identified above) with avoided costs updated by the Energy Division consultant in compliance with D.10-04-029.

The TRC ratio is greater than 1.0 and the TRC net benefits are positive, as required for the portfolio, indicating that the avoided costs of energy exceed the energy efficiency program costs and provide a net resource benefit from a broad societal perspective. The PAC ratio is greater than 1.0, as required for the portfolio, indicating that the avoided costs of energy exceed the energy efficiency program costs and have a net resource benefit from a program administrator perspective.

The energy savings and incremental costs are from the Database for Energy Efficiency Resources (DEER) database where applicable and are otherwise documented in workpapers submitted to the CPUC. The effective useful lives (EUL) and net-to-gross values are taken from DEER where applicable and are otherwise documented in workpapers.

## SECTION 5

### BILL IMPACTS

**Table 5**

**Table 5:**

*Ratepayer Impacts*

<b>2012</b>	<b>Electric Average Rate (Res and Non-Res) \$/kwh</b>	<b>Gas Average Rate (Res and Non-Res) \$/therm</b>	<b>Average First Year Bill Savings (\$)</b>	<b>Average Lifecycle Bill Savings (\$)</b>
PG&E	\$0.15381	\$1.24700	\$306,143,845	\$3,153,621,528
<b>PG&amp;E Average</b>				

PG&E Notes:

- (1) 2012 weighted average bundled electric rate as of March 1, 2012, is \$0.15381 per kwh.
- (2) 2012 weighted average bundled gas rate as of April 1, 2012, is \$1.247 per therm
- (3) First year and lifecycle energy savings exclude ESA Program.

PG&E's electric and gas average rates are weighted to reflect as filed 2012 rates and adopted electric and gas forecast volumes. The average gas rate for gas transport customers has been calculated using PG&E's filed monthly core procurement rate as a proxy.

As agreed in the IOUs' conference call with Energy Division staff on August 17, 2007, average electric (residential and nonresidential) and gas (residential and nonresidential) rates will be included in the annual report to calculate the average first year and lifecycle bill savings. Also, it was agreed to use an average rate to calculate the average first year and average lifecycle bill savings from the participant perspective as follows:

- The average first year electric bill savings is calculated by multiplying an average (residential and nonresidential) electric rate with the first year kWh energy savings.
- The average first year gas bill savings is calculated by multiplying an average (residential and nonresidential) gas rate with the first year therm energy savings.
- The average lifecycle electric bill savings is calculated by multiplying an average (residential and nonresidential) electric rate with the lifecycle kWh energy savings.
- The average lifecycle gas bill savings is calculated by multiplying an average (residential and nonresidential) gas rate with the lifecycle therm energy savings.

## Section 6

### Green Building Initiative

Table 6

**Table 6:***Green Building Initiative (1, 2)*

2012	Expenditures (3)	GWH			MW			MMth		
		Goal	Annual	% of Goal	Goal	Annual	% of Goal	Goal	Annual	% of Goal
PG&E	\$ 59,175,978	N/A	342	N/A	N/A	60	N/A	N/A	6	N/A
<b>PG&amp;E</b>	<b>\$ 59,175,978</b>		342			60			6	

PG&amp;E Notes:

- (1) All energy savings numbers are gross.
- (2) Does not include ESA Program, Codes & Standards, and Nonresidential Audits.
- (3) Expenditures include incentive dollars only for 2012.
- (4) For savings assumptions, please refer to footnotes provided in Table 1.

Governor Arnold Schwarzenegger signed Executive Order S-20-04 (Green Building Initiative) regarding Green Buildings on December 14, 2004. It established the State of California's priority for energy and resource-efficient high performance buildings.

The Executive Order sets a goal of reducing energy use in state-owned buildings by 20 percent by 2015 (from a 2003 baseline) and encourages the private commercial sector to set the same goal. The order also directs compliance with the Green Building Action Plan (PDF file, 166 kb), which details the measures the state will take to meet these goals.

More details about the project can be found on the CEC's webpage at <http://www.energy.ca.gov/greenbuilding/>

Table 6 shows the expenditures and energy savings in 2012 for the Governor's Green Building Initiative (GBI). In 2010-2012 Energy Efficiency portfolio cycle, the following programs with their respective EEGA program code and description contributed to the GBI. Additional PG&E programs that supported the GBI with integrated and coordinated energy savings include Local Government Energy Watch Partnerships, Third Party Programs, and PG&E core program offerings including Self Generation Incentive Program.

EEGA_CODE	EEGA_DESCRIPTION
PGE21261	California Community Colleges (CCC)
PGE21262	University of California/California State University (UC/CSU)
PGE21263	State of California
PGE21264	Department of Corrections and Rehabilitation (CDCR)

Since 2004, the California Department of Corrections and Rehabilitation, University of California, California State University, and California Community College systems have engaged with PG&E through formal energy efficiency contracts to achieve energy savings reductions and receive funding from California's IOUs.

In 2006, PG&E entered into a Memorandum of Understanding (MOU) with the State of California and formed the State of California / IOU Energy Efficiency Partnership. The purpose of this MOU was to provide a foundation for the IOUs to collaborate with the Green Action Team and facilitate the mutual implementation of energy efficiency projects that will assist the State of California agencies in complying with Executive Order S-20-04 (EO), and to achieve cost-effective energy savings through energy efficiency retro-commissioning (RCx) and retrofits of state-owned facilities in accordance with the California Public Utilities Commission (CPUC) D.05-09-043 and the IOUs' CPUC-approved energy efficiency and demand response programs.

The non-resource programs in PG&E's 2010-2012 Energy Efficiency portfolio also contributed significantly to achieving the goals of the GBI by introducing customers to the general benefits of energy efficiency as well as to specific measures that could increase the energy efficiency of their homes and businesses.

Education, training, and online components are offered to State of California employees through the Energy Training Centers in San Francisco and Stockton.

Efforts continue with all statewide partnerships and the investor owned utilities. Commitments have been made through the 2013-2014 program cycle to support reducing energy use in state-owned buildings.

## SECTION 7

### SHAREHOLDER PERFORMANCE INCENTIVES

Shareholder earnings that were accrued during the 2010-2012 program cycle are from activities performed in program years 2006-2008, 2009 and 2010, respectively. The mechanisms and payments associated with those program years varied slightly and the paragraphs below discuss, in order, the mechanism type, history and payment awarded during those program years.

The earnings recorded in 2010 are from the final true-up of the 2006-2008 shareholder performance incentive. This mechanism was a 7% shared savings rate mechanism established in D.07-09-043, modified by D.08-01-042, and finalized in D.10-12-049. The final payment of the 2006-2008 program cycle for PG&E was \$29.1M and was recorded in 2010.

The earnings recorded in 2011 are based on the 2009 shareholder performance incentive. This mechanism was carried forward from the RRIM mechanism originally created for the 2006-2008 program cycle. This mechanism resulted in earnings of \$26.1M for PG&E recorded in 2011 for program year 2009, as approved in D.11-12-036.

The earnings recorded during program year 2012 are for the 2010-2012 program cycle shareholder performance incentive mechanism that was adopted by the Commission in D.12-02-032. The 2010-2012 mechanism awards earnings of 5% of annual program expenditures with up to 1% additional incentive levels for activities performed in-line with the Commission's ex ante review processes. PG&E was authorized an incentive of \$21M for program year 2010, recorded in program year 2012.

The table below contains the authorizing decision and final payment awarded to PG&E for program years 2010-2012.

Program Year for Activities Paid	Year Incentive Recorded	Authorizing Decision	Shareholder Incentive
2008	2010	D. 10-12-049	\$29.1M
2009	2011	D. 11-12-036	\$26.2M
2010	2012	D. 12-12-032	\$21.0M

## SECTION 8

### SAVINGS BY END-USE

Table 8

**Table 8:**  
*Annual Savings By End-Use*

	GWH	% of Total		MW	% of Total	MMTh = 1,000,000 therms	% of Total
<b>Residential</b>	<b>656</b>	<b>0.35</b>	-	<b>107</b>	<b>0.33</b>	<b>(6)</b>	<b>-26.61%</b>
Appliances	10	0.53%		5	1.65%	1	3.33%
Consumer Electronics	30	1.59%		3	0.93%	(0)	-1.75%
Cooking Appliances	-	0.00%		-	0.00%	-	0.00%
HVAC	29	1.53%		12	3.72%	2	9.80%
Lighting	491	26.33%		73	22.58%	(11)	-51.75%
Pool Pump	5	0.25%		1	0.20%	-	0.00%
Refrigeration	25	1.33%		4	1.22%	(0)	-0.76%
Water Heating	0	0.00%		0	0.06%	1	2.71%
Other	67	3.58%		9	2.88%	2	11.81%
<b>Nonresidential</b>	<b>642</b>	<b>34.37%</b>		<b>123</b>	<b>38.17%</b>	<b>27</b>	<b>127.33%</b>
HVAC	115	6.18%		27	8.54%	4	17.89%
Lighting	285	15.25%		54	16.71%	(1)	-6.63%
Office	17	0.90%		2	0.72%	(0)	-0.06%
Process	110	5.88%		23	7.10%	21	99.55%
Refrigeration	66	3.54%		7	2.07%	0	1.38%
Other	49	2.62%		10	3.03%	3	15.20%
<b>Energy Savings Assistance Program</b>	<b>37</b>	<b>2.01%</b>		<b>8</b>	<b>2.43%</b>	<b>1</b>	<b>5.72%</b>
<b>Codes &amp; Standard Energy Savings</b>	<b>531</b>	<b>28.47%</b>		<b>84</b>	<b>26.16%</b>	<b>(1)</b>	<b>-6.44%</b>
<b>PG&amp;E ANNUAL PORTFOLIO SAVINGS</b>	<b>1,866</b>	<b>100%</b>		<b>321</b>	<b>100%</b>	<b>21</b>	<b>100%</b>

PG&E Notes:

- (1) All energy savings numbers are gross.
- (2) Includes ESA Program.
- (3) For savings assumptions, please refer to footnotes provided in Table 1.

Table 8 shows the 2012 annual savings of all programs by end use. The energy savings recorded by PG&E's energy efficiency portfolio comply with the Commission's policy rules in the Energy Efficiency Policy Manual, Version 4.0, as well as with subsequent Commission decisions and rulings.

The Energy Savings Assistance (ESA) Program energy savings reported above are from the ESA Program 2012 Annual Report provided to the Commission in May 2013. ESA measure savings are defined in D.12-08-044.

## SECTION 9

### COMMITMENTS

Table 9

**Table 9:***Commitments*

Commitments Made in the Past Year with Expected Implementation by December 2012				
2010-12	Committed Funds \$	Expected Energy Savings		
		GWH	MW	MMth
PG&E	N/A	N/A	N/A	N/A
<b>PG&amp;E Total</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
Commitments Made in the Past Year with Expected Implementation <i>after</i> December 2012				
2010-12	Committed Funds \$	Expected Energy Savings		
		GWH	MW	MMth
PG&E	\$ 93,067,259	464	88	126
<b>PG&amp;E Total</b>	<b>\$ 93,067,259</b>	<b>464</b>	<b>88</b>	<b>126</b>

PG&amp;E Notes:

- (1) All energy savings numbers are gross.
- (2) Expenditures include incentive dollars only.
- (3) Does not include ESA Program.

Table 9 shows the incentive commitments at the end of 2012 for energy efficiency projects that are expected to be completed after December 2012. All projects use Nonresidential Retrofit and Nonresidential New Construction calculated applications and procedures to make long-term commitments on projects that require lead times or long construction schedules. Many of these are large commercial projects, complex industrial projects, or projects with complex administrative requirements such as schools or government buildings. The Residential New Construction subprogram also receives long-term projects such as subdivisions that will be built out over several years.

In addition, a number of third-party implementers and government partnerships serve larger customers and have program commitments for projects to be completed after 2012.

## APPENDIX A

### PG&E PROGRAM NUMBERS

Program ID	Program Name	Date Added (new programs)	Date Removed
PGE2100	Residential Energy Efficiency Program		
PGE21001	Home Energy Efficiency Surveys Program		
PGE21002	Residential Lighting Incentive Program for Basic CFLs		
PGE21003	Advanced Consumer Lighting Program		
PGE21004	Home Energy Efficiency Rebates		
PGE21005	Appliance Recycling Program		
PGE21006	Business and Consumer Electronics Program		
PGE21007	Multifamily Energy Efficiency Rebates Program		
PGE21008	Whole House Performance Program		
PGE2101	Commercial Program		
PGE21011	Commercial Calculated Incentives		
PGE21012	Commercial Deemed Incentives		
PGE21013	Commercial Continuous Energy Improvement		
PGE21014	Commercial Nonresidential Audits Program		
PGE2102	Industrial Program		--
PGE21021	Industrial Calculated Incentives		
PGE21022	Industrial Deemed Incentives		
PGE21023	Industrial Continuous Energy Improvement		
PGE21024	Industrial Nonresidential Audits Program		
PGE2103	Agricultural Program		
PGE21031	Agricultural Calculated Incentives		
PGE21032	Agricultural Deemed Incentives		

Program ID	Program Name	Date Added (new programs)	Date Removed
PGE21033	Agricultural Continuous Energy Improvement		
PGE21034	Agricultural Nonresidential Audits Program		
PGE21035	Agricultural Pump Efficiency Services Program		
PGE2104	New Construction Programs		
PGE21041	Residential New Construction		
PGE21042	Savings By Design		
PGE2105	Lighting Market Transformation		
PGE2106	Residential and Commercial HVAC		
PGE21061	Upstream HVAC Equipment Incentive		
PGE21062	HVAC Technologies and System Diagnostics Advocacy		
PGE21063	Commercial Quality Installation		
PGE21064	ENERGY STAR® Residential Quality Installation Program		
PGE21065	Residential Quality Maintenance and Commercial Quality Maintenance Development		
PGE21066	HVAC - Workforce Education & Training		
PGE2107	Codes & Standards (C&S) Program		
PGE21071	C&S Advocacy & CASE Studies: Building Codes		
PGE21072	C&S Advocacy & CASE Studies: Appliance Standards		
PGE21073	C&S Compliance Enhancements Training		
PGE21074	C&S Coordination (Statewide, EE Programs, External Entities)		
PGE21075	C&S REACH Codes		
PGE21076	C&S Other		
PGE2108	Emerging Technologies Program		

Program ID	Program Name	Date Added (new programs)	Date Removed
PGE21081	Assessments		
PGE21082	Scaled Field Placement		
PGE21083	Demonstration / Showcasing		
PGE21084	Market and Behavioral Studies		
PGE21085	Technology Supply Side Efforts		
PGE21086	Incubation		
PGE2109	Workforce Education & Training (WE&T)		
PGE21091	WE&T Centergies		
PGE21092	WE&T Connections		
PGE21093	WE&T Strategic Plan Implementation		
PGE2110	Marketing, Education & Outreach (ME&O)		
PGE21101	Statewide Marketing & Outreach		
PGE21102	ME&O Strategic Plan Support		
PGE2111	Statewide DSM Coordination & Integration		
PGE2112	Zero Net Energy Pilot Program		
PGE2113	Local DSM Coordination & Integration		
PGE21131	Integrated Marketing		
PGE21132	Integrated Education & Training		
PGE21133	Integrated Sales Training		
PGE21134	Integration Support		
PGE2114	On-Bill Financing		

Program ID	Program Name	Date Added (new programs)	Date Removed
PGE2125	Local Government Energy Action Resource (LGEAR) <sup>6</sup> Lake County Energy Watch Merced County Yolo County Energy Watch		
PGE21251	Innovator Pilots Program		
PGE21252	Green Communities		
PGE21261	California Community Colleges		
PGE21262	University of California/California State University		
PGE21263	State of California		
PGE21264	Department of Corrections and Rehabilitation		
PGE2130	Association of Monterey Bay Area Governments (AMBAG) Energy Watch		
PGE2131	City of San Joaquin Energy Watch		January 2013 (rolled into overall Fresno program effort)
PGE2132	East Bay Energy Watch		
PGE2133	Fresno County Energy Watch		
PGE2134	Kern County Energy Watch		
PGE2135	Madera County Energy Watch		
PGE2136	Marin County Energy Watch		
PGE2137	Mendocino County Energy Watch		
PGE2138	Napa County Energy Watch		
PGE2139	Redwood Energy Watch		

<sup>6</sup> For Merced County: Energy Watch on hold starting December 2011. Merced County savings included in overall LGEAR program serving all San Joaquin Valley Counties

Program ID	Program Name	Date Added (new programs)	Date Removed
PGE2140	San Joaquin County Energy Watch <sup>7</sup>		April 2011
PGE2141	San Luis Obispo County Energy Watch		
PGE2142	San Mateo County Energy Watch		
PGE2143	Santa Barbara County Energy Watch		
PGE2144	Sierra Nevada Energy Watch		
PGE2145	Sonoma County Energy Watch		
PGE2146	Silicon Valley Energy Watch		
PGE2147	San Francisco Energy Watch		
PGE2176	California New Homes Multifamily		
PGE2177	Enhance Time Delay Relay		
PGE2178	ENERGY STAR® Manufactured Homes		
PGE2179	Direct Install for Manufactured and Mobile Homes		
PGE2181	Air Care Plus		
PGE2182	Boiler Energy Efficiency Program		
PGE2183	Comprehensive Retail Energy Management		
PGE2185	EnergySmart Grocer		
PGE2186	Enhanced Automation Initiative		
PGE2187	Monitoring-Based Persistence Commissioning		
PGE2189	Cool Controls Plus		October 2011
PGE2190	LodgingSavers		

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<sup>7</sup> For San Joaquin County: Energy Watch on hold starting April 2011. San Joaquin County savings included in PGE2140 budget.

Program ID	Program Name	Date Added (new programs)	Date Removed
PGE2191	Medical Building Tune-Up		
PGE2193	School Energy Efficiency		
PGE2194	Energy Fitness Program		
PGE2195	Energy Savers		
PGE2196	RightLights		
PGE2197	Small Business Commercial Comprehensive		
PGE2198	Data Center Cooling Controls Program (DCCCP)		
PGE2199	Energy-Efficient Parking Garage		
PGE2200	Furniture Store Energy Efficiency		
PGE2201	High Performance Office Lighting		
PGE2202	Light Emitting Diode (LED) Accelerator		
PGE2203	Monitoring-Based Commissioning		
PGE2204	SmartVent for Energy-Efficient Kitchens		
PGE2205	Casino Green		-
PGE2206	Healthcare Energy Efficiency Program		
PGE2209	Ozone Laundry Energy Efficiency		
PGE2210	Cool Schools		
PGE2212	California Preschool Energy Efficiency Program		
PGE2213	K-12 Private Schools and Colleges Audit Retro		
PGE2214	Energy Efficiency Entertainment Centers		
PGE2220	Assessment, Implementation and Monitoring (AIM) Compressed Air Efficiency		
PGE2221	California Wastewater Process Optimization		
PGE2222	Energy Efficiency Services for Oil Production		
PGE2223	Heavy Industry Energy Efficiency Program		

Program ID	Program Name	Date Added (new programs)	Date Removed
PGE2224	Industrial Compressed Air		
PGE2225	Refinery Energy Efficiency Program		
PGE2227	Cement Production and Distribution Energy Efficiency		
PGE2228	Industrial Recommissioning Program		
PGE2230	Dairy Energy Efficiency Program		
PGE2231	Industrial Refrigeration Performance Plus		
PGE2232	Light Exchange Program		
PGE2233	Wine Industry Efficiency Solutions		
PGE2234	Comprehensive Food Process Audit and Resource Efficiency Program		
PGE2235	Dairy Industry Resource Advantage Program		
PGE2236	Process Wastewater Treatment Energy Management (EM) Program for Ag Food Processing		
PGE2240	Builder Energy Code Training		
PGE2241	Green Building Technical Support Services		
PGE2242	Cool Cash		